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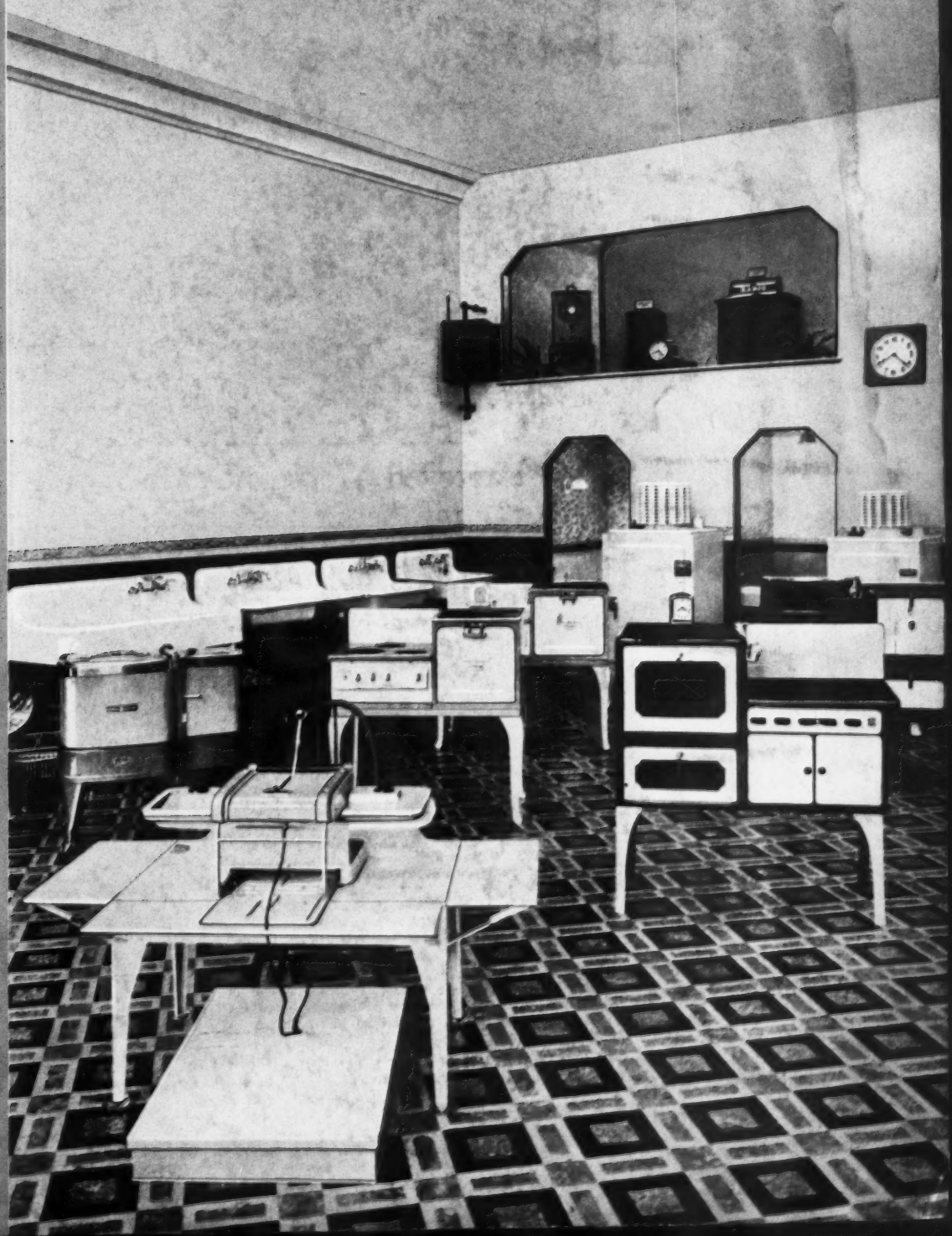
DOMESTIC ENGINEERING

PLUMBING & HEATING CONTRACTING AND MERCHANDISING



MAY 28, 1932

A New Plan for Kitchen Sales

AUTOMATIC HEAT
PAGE 67

AND IN BALTIMORE

1. HUTZLER BROS. STORE

2. PARK BANK BUILDING

3. LEXINGTON BUILDING

4. ISAAC HAMBURGER STORE

5. MARYLAND TRUST BLDG.

5 LEADERS MODERNIZE HEATING

Change to Improved Webster Systems with "Control-by-the-Weather" brings better heating and important economies

While others consider, Baltimore *acts*—with the result that these important buildings now have a distinct physical and financial advantage over those that strive to "get along" with obsolete, wasteful heating systems.

HUTZLER BROS. STORE: Converted 1930 to Improved Webster System with Moderator Control. First season showed a return of 23.9% on the investment in addition to comfortable, even temperatures appreciated by both customers and employees. Naturally, the new 1932 extension to Hutzler's includes the same notable features of Moderator Control.

PARK BANK BLDG.: Remodeled and enlarged 1929. Now heated by an Improved Webster System with Moderator Control. Former heating complaints eliminated. A 72% increase in radiation due to remodeling has resulted in but 6% increased heating steam consumption.

LEXINGTON BUILDING: Equipped late 1930 with an Improved Webster System and Moderator Control. Steam consumption substantially reduced. This twenty-one story structure is owned and operated by and is the main office of Consolidated Gas, Electric Light and Power Co., a prominent public utility and leader in development of modern "street steam" utilization.

ISAAC HAMBURGER STORE: Heating system modernized late 1931. Now heated by Improved Webster System with Moderator Control. Better heating has resulted and indications point to worthwhile economies.

MARYLAND TRUST BLDG.: Converted late 1931 to Improved Webster System with Moderator Control. Results in the form of even heating and lower steam consumption are assured.

The many advantages of the Improved Webster Systems with Moderator Control are not confined to modernized buildings. New buildings in Baltimore which will have this modern system are the Enoch Pratt Library and the City Hospital Nurses Home.

Whether you are concerned with a heating system, large or small, you will be interested in the *facts* back of the returns on investment in heating system *modernization*. If you want to know how Improved Webster Systems have cut down fuel bills and provided greater comfort by proper *control and Distribution* of heat, ask to see the complete reports available on a number of these Webster installations. Write today for the full information.

aM21

IMPROVED Webster Systems of Steam Heating

WARREN WEBSTER & COMPANY, Camden, N. J. Pioneers of the Vacuum System of Steam Heating

Branches in 60 principal U. S. Cities—Darling Bros., Ltd., Montreal, Canada

VOGEL NUMBER TEN-A Seat-Action Closet Combination with concealed tank. VOGEL NUMBER TEN has exposed tank. Either can be furnished with syphon-action or syphon-jet bowl, although we recommend the syphon-action type.

STURDY and ECONOMICAL

They give years of service in schools, factories, public and semi-public places

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THESE Vogel Closets are designed especially for installations of this kind, where economical operation is essential.

Closets in schools, factories, public and semi-public places must continue to operate year in and year out with few, if any repairs, and they have to stand all kinds of use and abuse.

So on your next job of this kind don't take any chances—install Vogel Number Ten or Ten-A Closets and add another satisfied customer to your list.

Literature imprinted with your name and address is available

JOSEPH A. VOGEL COMPANY
WILMINGTON, DEL. ST. LOUIS, MO.

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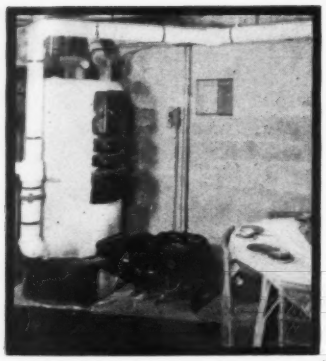

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Established 1889

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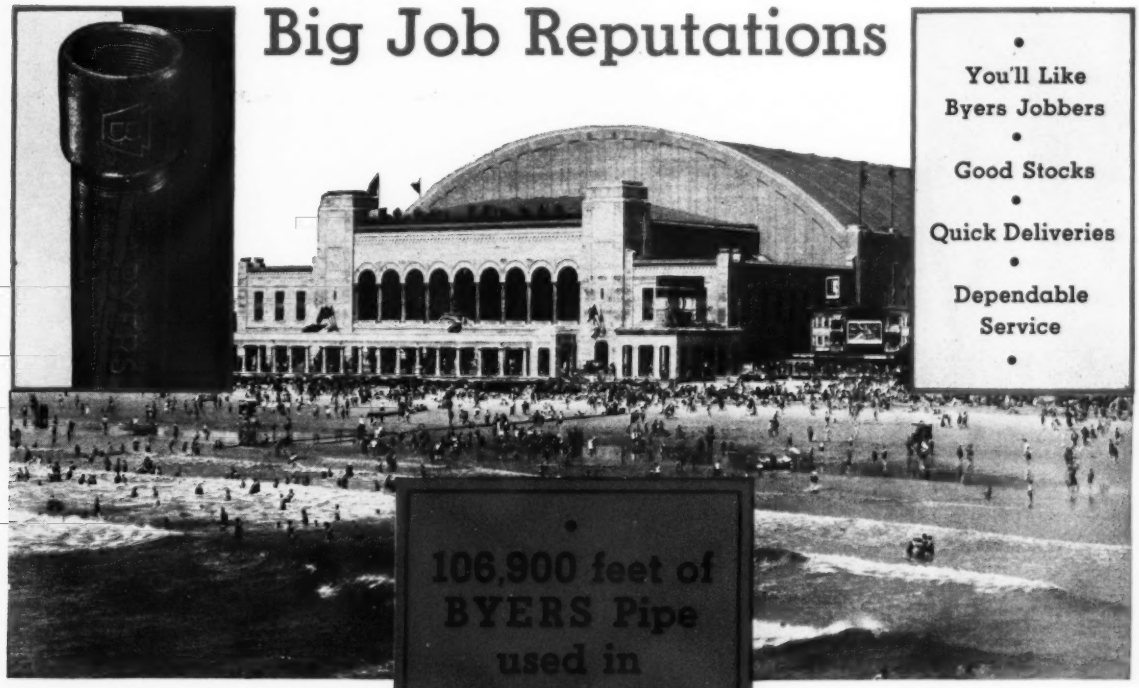
Big Job Materials help build Big Job Reputations



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THE BIG JOBS—where materials are carefully selected—are giving Byers the call. In city after city this country-wide trend to Byers is growing daily. For example, consider the famous auditorium in Atlantic City. Over twenty miles of Byers Genuine Wrought Iron Pipe was installed in this structure alone—the largest of its kind in the world.

No wonder contractors who make these installations share this big job prestige! These big projects make real names for them. They are their jobs—just as they are Byers' jobs.

Today Byers offers contractors the finest genuine wrought iron in its 68 years of industry leadership, due to modern manufacturing methods which permit strict control in every step of its making. Then, when you consider wrought iron's unequaled service records, it is not at all unusual that Byers helps build big job reputations.

Write today for the Byers Pipe Threading Bulletin which discusses the best threading practice. Complete, practical and valuable. A. M. Byers Company, Pittsburgh, Pa. Established, 1864.

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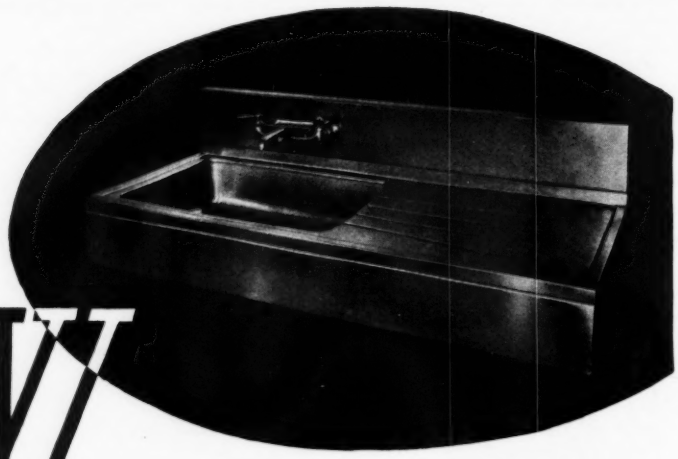


The NEW moderately priced

MONEL METAL SINKS

● They're here... and they're beautiful... the new Monel Metal "Straitline"* Sinks.

Now you can offer your customers genuine Monel Metal kitchen sinks at prices that are approximately 50% lower than previous prices. These new sinks cost practically no more than the better grade of ordinary sinks of comparable working area—a 60" Monel Metal sink has as much actual working space as a 74" ordinary sink.

Modern in design, rich in finish, sturdy in construction, these beautiful new sinks represent an outstanding manufacturing achievement. They are bound to create a sensation in your community... certain to open a great new field of profits for you!

A big national advertising campaign in The Saturday Evening Post, Good Housekeeping and other leading magazines will help you sell the new Monel Metal "Straitline" Sinks.

At the same time, national advertising will continue to feature the higher-priced Monel Metal "Streamline"* Sinks. With these parallel campaigns . . . and Monel Metal Sinks now priced within reach of every purse... every wide-awake plumber has an unprecedented opportunity to make money selling sinks!

If you have not received your copy of the new illustrated catalogue giving sizes and prices of Monel Metal Kitchen Sinks, write today.

*Trade-mark.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

See Them at the Show!

Monel Metal kitchen sinks will be exhibited at the 50th Annual Convention, National Association of Master Plumbers, Madison Square Garden, New York, June 20th to 23rd . . . . Booths 75 and 76.

A HIGH NICKEL ALLOY

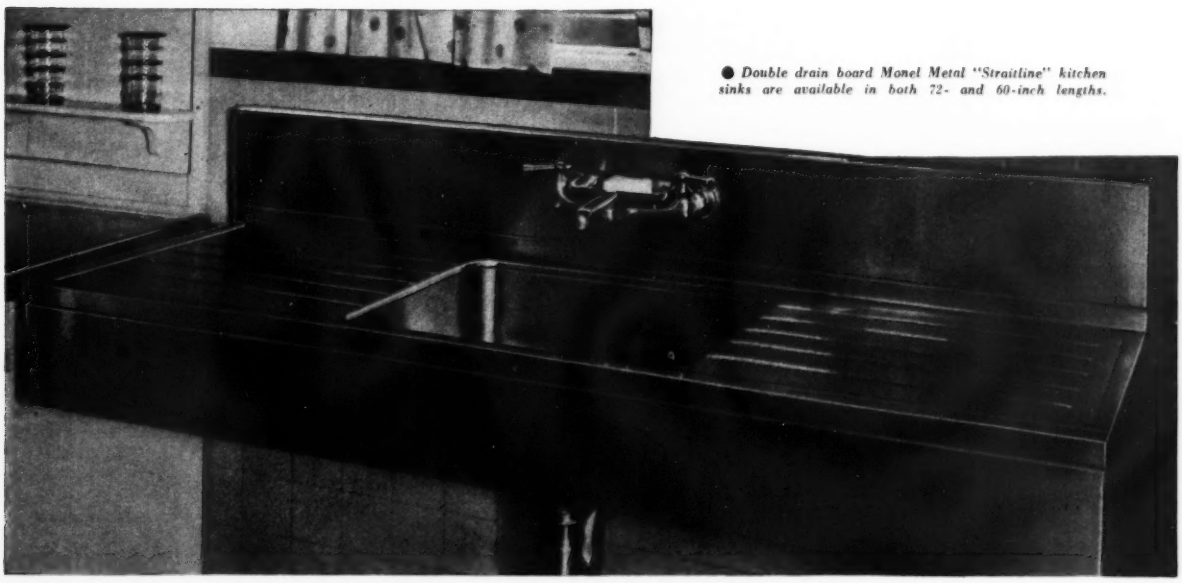
MONEL METAL

NICKEL ALLOYS LOOK BETTER LONGER

● *Single drain board Monel Metal "Straitline" kitchen sink. Available with drain board on either right or left side, in both 41- and 50-inch lengths.*

"STRAITLINE"

tap a large...new market..!



● *Double drain board Monel Metal "Straitline" kitchen sinks are available in both 72- and 60-inch lengths.*

8 *MONEY-MAKING FEATURES OF MONEL METAL SINKS*

1. Rich, lustrous beauty . . . with a satiny, glass-smooth surface that's easy to clean.
2. Neutral, silver tone that blends with any kitchen color scheme.
3. Rust-proof, corrosion-resisting . . . strong and sturdy.
4. Solid metal . . . no coating to chip, crack or wear off. Less danger of damage during installation.
5. Monel Metal "Straitline" kitchen sinks are available in a wide range of sizes and prices, including special models for use with built-in kitchen cabinets.
6. More working space than ordinary sinks of same nominal sizes. Reinforced and sound-deadened.
7. Less weight. Saves labor and expense... installing, stocking and handling.
8. *Priced within easy reach of nearly every purse, "Straitline" Sinks tap a big new market for you!*

INCO MONEL METAL

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

Do you know what Gas Industry Cooperation has actually accomplished for the Plumbing Trades? If you are interested in bigger profits for your business, be sure to visit the complete

COOPERATIVE EXHIBIT

of the American Gas Association and Metropolitan Gas Companies during the

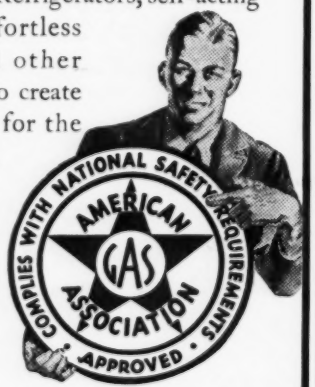
50TH

ANNIVERSARY CONVENTION

OF THE

NATIONAL ASSOCIATION OF MASTER PLUMBERS

See how the gas industry is helping the plumber to expand his business by selling modern approved Gas Appliances. Learn what automatic Gas Refrigerators, self-acting Water Heaters, effortless Gas Heating and other services have done to create new opportunities for the Plumbing Industry.



"TESTED GAS APPLIANCES FOR THE PUBLIC"

Madison Square Garden

NEW YORK

JUNE 20 to 23, 1932

Features of the Exhibit include interesting information about

TESTING APPLIANCES

from the National Laboratories of the American Gas Association. Booths 65-66; 97-98.

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METROPOLITAN GAS COMPANIES

If you want the last word in copper-bearing pipe ...*send for this booklet.*

A handbook of valuable information—this publication deserves a foremost place among your data books . . . contains a brief but comprehensive summary of the development, properties and applications of Copper-Clude—a modern achievement in corrosion resisting pipe—a pipe that strikes an ideal balance between initial cost and ultimate service in all tubular installations exposed to atmospheric corrosions.

Write today for your copy

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GENERAL OFFICES: CLARK BUILDING
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Seamless Mills: Ambridge, Penna.

SPANG *copper-clude* PIPE

Put on a Summer Drive!

THOUSANDS of homes throughout the country will be improved during the summer. New plumbing, automatic heat, new radiation, refrigeration and hundreds of smaller pieces of plumbing and heating equipment will be purchased.

The "Spend for the Home" drive will direct much of this business to you. The "Spend for the Home" material enables you to put on a summer drive for business at a very low cost.

DOMESTIC ENGINEERING has prepared, at great expense, a wealth of advertising and selling matter based upon this drive. You can use this matter any way you wish. However you use it, it will mean MORE BUSINESS to you.

It will enable you to tie up with the effort of thousands of other retailers serving the home; retailers who are now and have been using the "Spend for the Home" idea to increase their sales.

Equip yourself to put on a summer drive. Start now. Get your share of the remodeling dollars—and the new construction dollars—that will be spent.

Use the "Spend for the Home" cards, stickers, electrotypes in your show windows, store, on your truck, your automobile, in your newspaper ads, your sales letters. Watch each issue of DOMESTIC ENGINEERING for other selling ideas.

GET your supply of this material today. Here are the prices of the window cards or posters, size, 8¼x12 inches.

The prices of these cards are as follows:

10 cards for 50 cents
25 cards for 75 cents
50 cards for $1.25
100 cards for 2.00
500 cards for 9.00
1000 cards for 17.00

We cannot undertake to ship less than 10 of these cards.

Stickers of the slogan, in the same design as shown above but of 1¼ in. x 2 in. proportions are also available. Order these stickers. Use them on your letterheads, envelopes, billheads, business cards, etc., etc.

The prices of the stickers are as follows:

1000 stickers for $1.50
2000 stickers for 2.50
5000 stickers for 5.00

Get a supply of cards and stickers now.

Electrotypes of various sized cuts of the slogan are also available. These can be had for one and two-color printing. Electrotypes are priced as follows:

Electro for one-color printing, 1½x2¾ in..... $0.35
Electro for two-color printing, 1½x2¾ in..... .65
Electro for one-color printing, 3½x5¼ in..... .55
Electro for two-color printing, 3½x5¼ in..... 1.00
Electro for one-color printing, size approximately 8x12 in..... 2.50
Electro for two-color printing, size approximately 8x12 in..... 4.50

Order what you need to get in on this big drive now.

DOMESTIC ENGINEERING 1900 PRAIRIE AVE., CHICAGO

WHEREVER STEEL PIPE IS USED

Supplied in Black and Galvanized, in full Standard Weight, Extra Strong and Double Extra Strong.

UNIFORM QUALITY STEEL—only soft, ductile steel made to a special analysis is used.

FREE FROM DEFECTS—J & L pipe is straight and free from blisters, cracks and other injurious defects and is free from excess scale.

THREADS AND COUPLINGS—the pipe has good clean-cut threads. Couplings are sound and correctly tapped to give a tight joint.

GALVANIZING—the J & L process gives a thorough coating, which does not flake off, and prevents clogging with spelter.

MANUFACTURING CONTROL—J & L exercises ownership-control over all raw materials and processes of manufacture, from iron ore to finished product.

INSPECTION—all J & L pipe is subject to exacting and rigid tests and inspection.

IDENTIFICATION—look for the name JONES & LAUGHLIN on every length.

J&L STEEL

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA

Sales Offices: Atlanta Boston Buffalo Chicago Cincinnati Cleveland Dallas Denver Detroit Erie Los Angeles Memphis Milwaukee Minneapolis New York Philadelphia Pittsburgh St. Louis San Francisco

Warehouses: CHICAGO CINCINNATI DETROIT MEMPHIS NEW ORLEANS PITTSBURGH

Canadian Representatives: JONES & LAUGHLIN STEEL PRODUCTS COMPANY, Pittsburgh, Pa., U. S. A., and Toronto, Ont., Canada

J & L JUNIOR BEAMS | J & L STEEL PIPE | J & L LIGHT CHANNELS | J & L NAILS and STAPLES BRIGHT and GALVANIZED | J & L CONCRETE BARS | J & L STRUCTURAL STEEL | J & L STEEL PILING

Do away with this *public enemy* . . a big cash reward will be yours . . . . . .

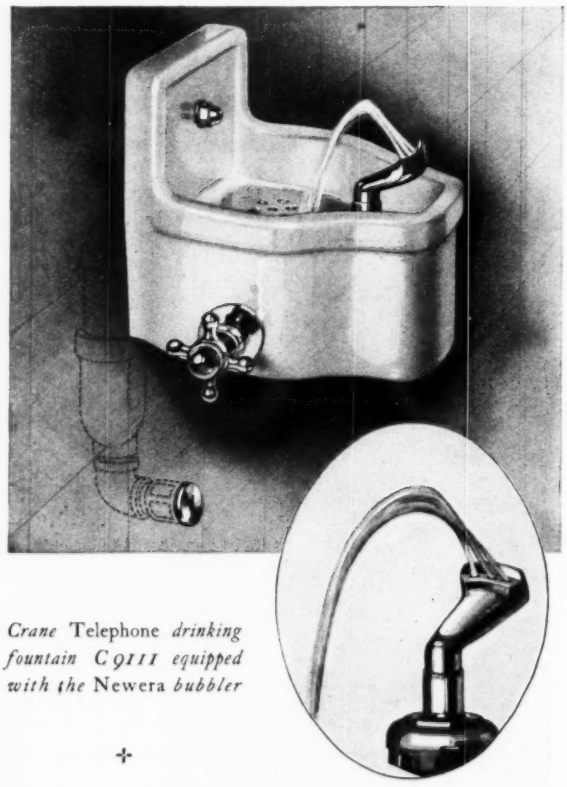
The United States Women's Bureau and the Health Departments of progressive cities have named the infection spreading, vertical stream bubbler drinking fountain a public enemy.

To take its place, they have set their seal of approval on new Crane fountains equipped with Crane *Newera* three-stream angle bubblers.

This action has created the biggest drinking fountain replacement opportunity in modern times.

A cash reward awaits the plumbing contractor who is among the first to enter this market.

If you'd like to enter it in the most profitable manner, get complete details on the Crane *Newera* bubbler and on the fountains constructed to use it; discuss with our Branch manager the most effective way of reaching school and hospital boards, of selling the managers of public and semi-public buildings.

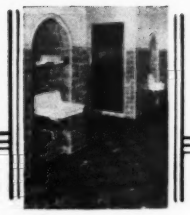


Crane Telephone *drinking fountain C 9111 equipped with the* Newera *bubbler*

CRANE CO., GENERAL OFFICES:
836 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS
NEW YORK: 23 W. 44TH STREET
Branches and Sales Offices in One Hundred and Seventy Cities

You are cordially invited to visit the Crane Booth at the Golden Anniversary Convention and Exposition of the National Association of Master Plumbers.

CRANE



BETWEEN OURSELVES

DOMESTIC ENGINEERING, MAY 28, 1932

Going Monthly

HERE'S some real news for you. From now on, DOMESTIC ENGINEERING will come to you once every month, or 12 times a year instead of once every two weeks or 26 times a year.

A Better Job

THAT becomes an item of real news, not just because of the change in the number of issues but because it offers us a chance to do the kind of a job which we believe you, as the reader, will like better.

A Better Service

PUBLISHING, like plumbing and heating, is a business and the customers in both cases want a complete service. No one likes to tell one's customer that one is out of a certain item but hopes to have it in later. It makes for better satisfaction when you can meet a customer's need by giving him what he wants when he wants it.

Our Editorial Plans

WE feel that way about DOMESTIC ENGINEERING. Its editorial service is planned just as carefully as you lay out a job. We make it the business of our editor and his associates to keep in touch with the many and varied interests of the plumbing and heating contractor. And from that intimate knowledge comes the editorial plan under which each phase of the contractor-dealer's business is covered in our editorial pages. And in addition, the amount of attention given to any one subject, depends upon the relative importance that topic has to the other activities of our contractor-dealer readers.

Engineering and Selling

ENGINEERING is necessarily an essential part of the equipment and knowledge of every contractor. It is the definite basis upon which his superior advantages as the distributor and fabricator of plumbing and heating equipment rest. It requires specialized editorial discussion such as our pages give. Merchandising has become of more and more importance. Its comparative newness to every one in the industry makes this class of DOMESTIC ENGINEERING'S service of vital concern to every dealer who is working to maintain his position and make his business more successful.

News and Management

NEWS, market information, office practice, shop management, new and improved items for store, shop and job—all of these unite to call for a better, bigger and more properly balanced reader service in each issue.

Bigger Issues

WE can do this job better in a larger magazine assembled and distributed once a month than in a smaller issue mailed more frequently. The change thus offers us the opportunity to bring you in every issue a maximum of the ideas essential in the management of your business. We are working to make every issue a more productive one for you.

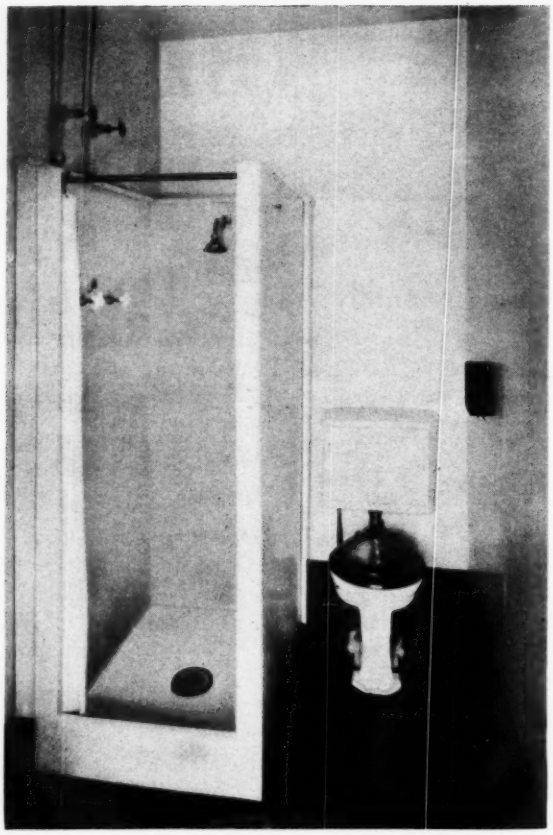
Who's Getting Business

YOU have noticed how in every issue recently, we have told you on the pages following this one, something definite and encouraging about methods which were bringing business to other contractor-dealers. The low price of materials and labor is one example because we reported to you within a few days after some dealers began aggressive and in some cases successful efforts to secure business on that new business factor.

602 Remodelling Jobs

THE leading article in this issue is different in subject, it does not report what your neighboring and distant competitors are doing. But it does surprise us and may surprise you, to learn how thoroughly the idea of remodelling has spread through the hotel field—contracts for 602 modernizing jobs in the last six months. Increased business to the hotels which modernized are proved in the figures we give you. It's worth reading because plumbing and heating are a part of practically every one of these jobs.

Your Editor



Every room with a shower — it's what the traveling public is demanding of the hotels

602 Hotels Remodeled

Owners discover out-of-date hotels do Million Dollars for modernization work this

THE hotels of the United States are modernizing out of the depression. They have made "modernization" more than just a word. A total of 602 of them have furnished reports on modernization projects within the past six months, which means that one in every sixteen hotels in this country, of 50 rooms and over, are spending money to modernize their properties. The remodeling pace is quickening for one reason—more profits.

In 1931, between $100,000,000 and $125,000,000 was expended by hotels for modernization purposes, and while no estimates are as yet available for 1932, preliminary reports indicate that the expenditures will exceed the 1931 totals.

About 8,500 transient hotels of 50 rooms or more represent the most important part of the American hotel industry. These have about 1,250,000 guest rooms, and are open all year. In addition, 2,500 leading summer and winter resort hotels are doing a seasonal but very large business. All of this offers a tremendous market for the plumbing and heating dealer.

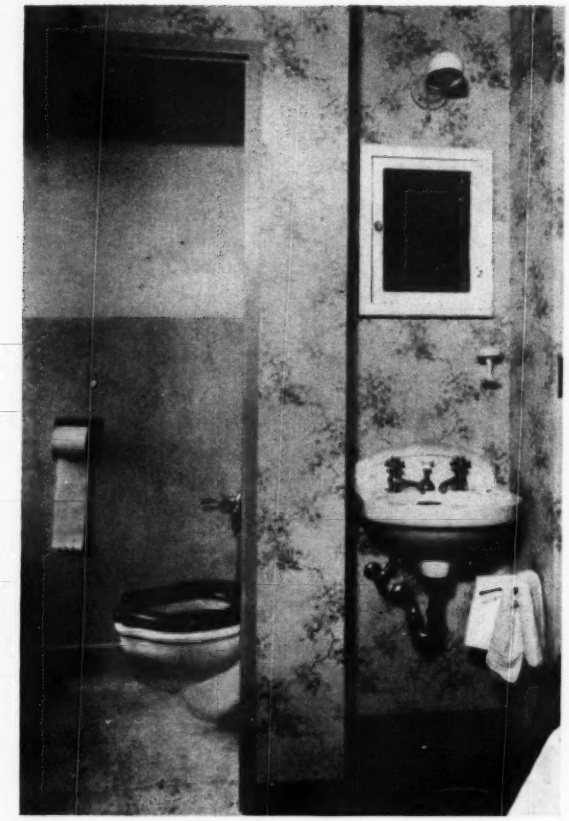
The hotel industry has learned from actual experience and careful study of operating figures, that out-of-date properties do not pay. Consequently, the hotel men have a decidedly selfish interest in modernization, in that the older hotels must modernize to stave off the competition of newer houses, and all hotels must reduce operating costs through adoption of new devices, rearrangement of interior, etc. Modern plumbing and heating equipment is a prime requisite of every hotel—it is one thing that a hotel's guests expect.

Recognizing the need for modernization and realizing that today's low commodity prices offer an unusual opportunity to have this work done, the business papers in the hotel industry have united in a campaign to urge hotel owners to bring their properties up-to-date.

That the hotels of the nation are responding to the appeals of the hotel press to remodel where the need exists and where the funds are available is clearly attested by the following table of modernizing contracts which was compiled by the Modernization Committee of the Hotel Press from news items published during the six months' period ending March 1, 1932. Only current modernization programs were included. The state-by-state figures are as follows:

Alabama 10	Louisiana 14	North Dakota. 1
Arizona 5	Maine 4	Ohio 27
Arkansas 3	Maryland 15	Oklahoma 12
California 32	Massachusetts. 12	**Oregon 11**
Colorado 7	Michigan 36	**Pennsylvania.. 54**
Connecticut .. 4	Minnesota 9	Rhode Island.. 1
D. of Columbia 10	Mississippi ... 10	South Carolina 5
Florida 42	Missouri 15	Tennessee 17
Georgia 11	Nebraska 12	Texas 37
Idaho 5	Nevada 3	Vermont 1
Illinois 7	New Hampshire 3	Virginia 6
Indiana 23	New Jersey ... 4	Washington .. 18
Iowa 13	New Mexico .. 3	West Virginia. 10
Kansas 7	New York 40	Wisconsin 9
Kentucky 13	North Carolina 21	Total.....602

From January 1, 1932, to March 1, 1932, more than $6,000,000 in hotel modernization was reported. And



This view shows lavatory and toilet installation in a recently remodeled hotel room

in Last Six Months

not pay — Will spend approximately 125 year — Opens big market for contractor

part of these improvements were paid for by the mortgage holders! They could see profit in it. This is interesting in view of the fact that in the beginning it was hard to convince hotel owners that they could get modernization money anywhere, no matter how logical the expenditure might seem.

"The successful hotel can not operate profitably unless it maintains that part of its physical equipment with which the guest comes into contact," says "Hotel Management" in one of its recent issues. "Many prominent hotel operators believe hotels must modernize their properties within the next year. Otherwise their guests will go elsewhere."

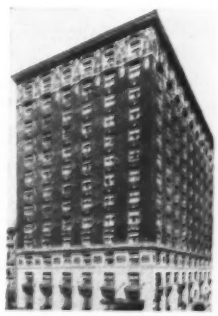
A number of these projects have been completed long enough so that their effects on hotel profits can be determined. The Modernization Committee is starting the publication of reports which show actual increases in business and profits directly traceable to modernization.

An actual example of the value of modernization is revealed in an article in a recent issue of "Hotel Management" titled, "How Modernization Increased a 100-Room Hotel's Potential Earnings $43.50 Daily." The article deals with the Oxford Hotel, San Francisco, and points out that although the rooms were reduced from 102 to 88 in number, their higher earning capacity more than makes up the difference. Approximately $90,000 was spent, which was more than the original cost. $326 was spent on renovating each room, including $210 for bath fixtures and plumbing, and $8 for shower curtain. In addition, $300 was spent for furnishing each room. The following shows the results in dollars and cents:

Net possible daily earnings after improvements	$132.00
Net possible daily earnings before improvements	73.50
Possible increase in daily revenue by improvements	$ 58.50
Approximate daily interest on investment (at 6%)	15.00
	$ 43.50

In another article, "Hotel Management" tells how the Hotel Lorraine, Philadelphia, increased its monthly income $2,180 through modernizing. On each typical floor of this house, bathtubs and toilets were added to five rooms which heretofore lacked these facilities, and toilets were added to seven additional rooms which previously were equipped only with hot and cold running water. New toilet seats were installed. Brass piping was substituted for the former lead hot water pipes and galvanized pipes for the cold water system. The old nickel bathroom fixtures were chromium plated.

The article points out that a material saving has been effected in the Lorraine's heating bill as a result of the installation of two new boilers. It is estimated that the saving will amount to $3,000 per year, which will soon pay the cost of the two boilers.



By going after this hotel modernization business the plumbing and heating contractor will aid his own sales and aid in turning the "urge" that is being created by the hotel press into sales. The above facts are conclusive sales arguments.

Fig. 1—In the illustration above, the two 2-inch horizontal vent lines were installed to serve six lavatory stacks

How Poor Economy Resulted from

By A. J. PARKS

The installation described in this article was made in a country town where there is no plumbing code in force

ARCHITECTS sometimes have funny ideas about plumbing, and recently we ran onto some work that proves the statement.

Figs. 1, 2 and 3 illustrate more or less satisfactorily the installation we have in mind. They are views taken in the attic of a large dormitory connected with one of our Eastern educational institutions.

When we get through with our story we believe you will agree that the method used in connecting the vents in the attic and carrying them through the roof was not the best that could have been used.

PLUMBING CONTRACTOR SUGGESTED CHANGES

We want to say, therefore, that the method was not the choice of the plumbing contractor who installed the job. In fact he advised a more approved method, but was held by the plans and specifications and by the orders of the architect, to the method as shown.

The dormitory covered a large ground area, and contained two floors and attic.

Each room contained a lavatory only, all other toilet arrangements being handled by eight large toilet rooms.

Inasmuch as the attic was to be used only for storage purposes, it was entirely feasible to carry horizontal lines on the attic floor to any desired extent, and the privilege of so running the pipe was used to the limit.

Figs. 1 and 3 show two of the four roof pipes serving something like 30 or 35 lavatory stacks, each stack receiving four lavatories. There was no criticism of the vent or drainage connections below the attic. The stacks were so arranged that most of them served a pair of lavatories back to back on each floor, and continuous venting was used throughout.

We do not know just what was in the architect's mind when he ran these 2-in. horizontal lines all over the lot, so to speak, instead of combining them in a more natural manner, and carrying a considerably larger number of pipes through the roof. We presume, however, that his thought was to hold the number of roof openings down as low as possible.

We have never seen just such a layout as this, and to see several hundred feet of 2-in. vent pipe lying flat on the attic floor did not look good to us.

There is not much excuse for venting unless it vents, and we very seriously question whether some of these 2-in. horizontal vent lines actually do much venting. Take for instance, the 2-in. vent line at the right in Fig. 3. This runs for 25 or 30 ft. in the direction shown, then at right angles for 40 or 45 ft., and again at right angles for another 30 or 35 ft. In its wanderings this pipe travels somewhere about 100 ft., taking

Fig. 2—The above view shows at the extreme right, a single roof pipe which is called on to serve four large toilet rooms

Incorrect Design in Running Roof Pipes

Both from the owner's and the sanitarian's point of view, this job stands as a forceful reason in favor of plumbing regulation

in one vent after another. The vent at the right in Fig. 1 probably travels 60 ft.

In Fig. 1 it will be noted that at the bottom of the 4-in. cast iron roof pipe there is a cleanout. In theory a cleanout at this point is an excellent idea. Practically, however, we doubt whether it will ever be uncapped. And if the cleanout is never opened, what happens? It seems to us that in the course of time debris is likely to collect until eventually the two 2-in. openings become closed. And then, how about the effectiveness of the venting of all the fixtures served by these two pipes? In that case the venting amounts to nothing.

The roof pipe in Fig. 3, and in all other cases except Fig. 2, have this same general cleanout arrangement.

It can be laid down as a fundamental principle, that vents which cannot be run vertically should have the greatest possible pitch in order to drain condensation and scale back to the drainage line.

The only remedy that we see that could have been applied, was to have provided a roof pipe for each group of not more than three or four of the lavatory stacks. This could probably have been arranged in such a way as to provide abundant pitch for each connection to the roof pipe through which the system is vented.

Aside from the danger of the closing of these vent lines with the consequent destruction of their ability to act as vents, there is the question of circulation of air through these long lines of 2-in. pipe.

So far as we know, there is no published data that would furnish a guide for the sizing of such long horizontal runs of venting. In the case of Fig 3, one of the horizontal runs not only extends horizontally 100 ft., but drops vertically at least another 25 ft.

CHANGES IN LAYOUT WERE POSSIBLE

Our guess for size of these horizontal vent lines, provided increase of size were the only problem involved, would be 3-in. Regardless of the matter of size, the method of running these vents is wrong. And how easy it would have been when the work was installed, to do the work in an efficient manner. That it could have been so done is proved by the fact that another dormitory erected just after the roughing on this one had been completed, showed the same general layout worked out properly. There is plenty of overhead room, and in the case of this second building, by using more roof pipes and carrying vent line extensions on a sharp pitch overhead instead of horizontally on the floor, all the bad effects we have mentioned were avoided.

Fig. 3—The two-inch horizontal vent lines shown in the illustration above, receive the waste vents of approximately twelve lavatory stacks

The work shown in Fig. 2 is somewhat of the same character as in the other two illustrations, but inasmuch as the horizontal lines are of 4-in. pipe and of shorter length, the work is not subject to the same criticism.

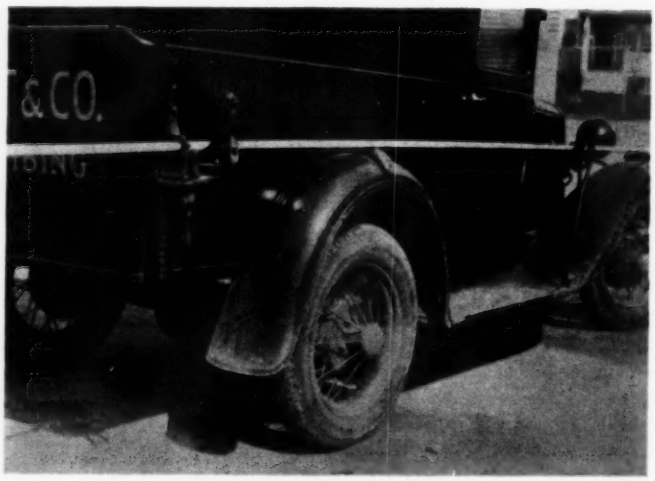
In Fig. 2, it will be observed that at the foot of the vertical roof pipe, there is an opening, into which another line of 4-in. vent pipe is to be connected. It is likely that this roof vent will in time become clogged.

In conclusion, we want to point out that this building was erected in a country town, subject neither to plumbing inspection nor supervision, except such as the architect or his assistants gave. Under conditions where plumbing installations are governed by a modern plumbing code, such venting methods could not have prevailed, and the circumstances give abundant testimony to the need and value of official supervision and inspection.

Efficient Method Used on Truck

IT IS common enough to see pipe vises attached to the rear ends of trucks used by heating and piping contractors. Likewise, there is nothing unusual about the use of a pipe rack on the side of a truck for convenience in transporting long lengths. Many a contractor's truck may be heard several blocks in advance of its arrival as a result of the clatter made by the pipe thrown on the truck's rack. In some instances a little care is taken and a handy piece of wire or rope serves to hold and quiet the pipe.

The illustration at the right is unusual in that it shows how the idea of two pipe vises and a pipe rack on the side of a truck may be used together. It is completely self-explanatory. The rack is large enough to hold a considerable quantity of pipe. The bottom of the saddle is on a level with the seat of the vises which is of the chain type. Regardless of whether one length or many are being carried, the chain wraps around them to hold all securely in place. There is no rattle and clatter here. When a length is to be threaded, the vise and rack are in place and ready for work.



Does a Copper Pipe Give Off More Heat Than Iron?

All of us know that copper conducts heat much more rapidly than iron. The question in many minds has been, does this also hold in the matter of giving up heat. The answer has been worked out in the following article by F. C. Houghten and Carl Gutberlet

1. The heat loss from bare copper pipe is approximately 54 per cent of the loss from bare black iron pipe of the same nominal size, and 203 per cent of the loss from iron pipe covered with four-ply air cell insulation.

2. The heat loss is approximately the same for horizontal and vertical pipe of the same size and material.

3. The heat loss from pipe may be calculated from the Stefan-Boltzman and the Rice-Heilman equations with a high degree of accuracy by using the proper shape factor and value of e, which is the emissivity coefficient. However, the choice of e for the case in hand is important.

SUMMARY OF CONCLUSIONS

These three statements summarize the results of a considerable amount of research work. They say that bare copper pipe loses only approximately one half as much heat as bare black iron pipe of the same nominal size. As a further comparison, bare copper pipe loses twice as much heat as the same nominal size iron pipe covered with four-ply air cell insulation.

The second statement says, in other words, that it makes practically no difference whether the pipe is horizontal or vertical as far as giving off heat is concerned provided the pipe in both instances is the same size and of the same material.

In regard to the third statement, it is not necessary to determine the heat loss from pipes by laboratory tests because equations have been developed which through calculations give these losses with a high degree of accuracy.

Many studies have been directed towards the determination of heat emission from bare and covered stand-

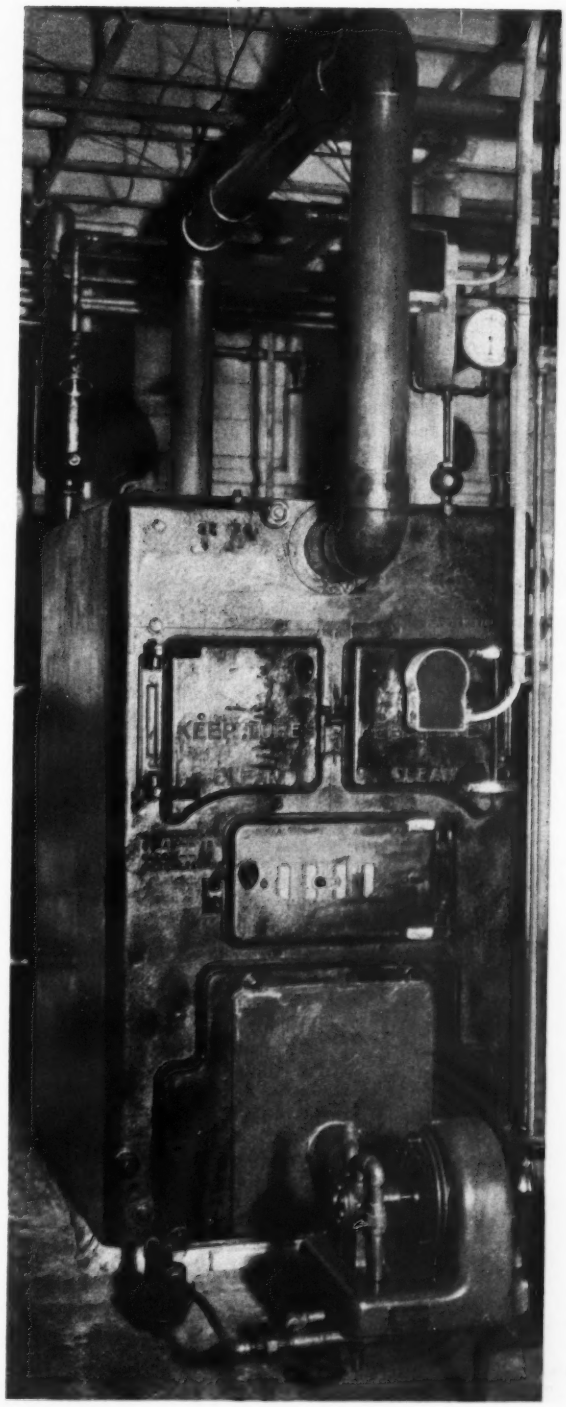


Fig. 1—This job is interesting in view of the fact that tubing was used for the steam main and general boiler piping. It indicates a very definite application for the information in this article

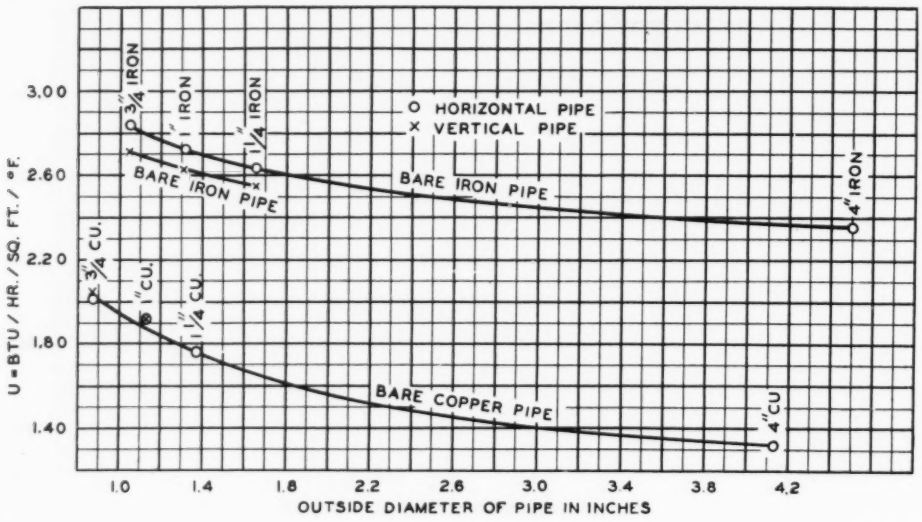


Fig. 2—In this chart, the relation between the heat emission per square foot of pipe surface and the pipe diameter is shown

ard iron and steel pipe carrying steam and water at various temperatures. This paper presents data on the heat emission from bare copper pipe under service conditions, resulting from a study made at the Research Laboratory of the American Society of Heating and Ventilating Engineers, in co-operation with the Associated Copper Tubing Manufacturers. A few data are included giving heat emission for galvanized, brass and aluminum pipe, the effect of painting the pipe on the rate of heat emission, and the reduction in heat emission from standard iron pipe resulting from the application of commercial insulation.

Since heat emission from iron pipe has been the subject of much research and analysis, and since the present study on copper tubing was of necessity brief in comparison, the study of heat emission from copper tubing was made comparative with heat emission from iron.

This article is based on excerpts taken from a paper which was presented at the 38th annual meeting of the American Society of Heating and Ventilating Engineers, Cleveland, Ohio, January, 1932.

Table I

Heat Emission from Bare and Covered Iron Pipe

Position	Size (Inches)	Bare			Covered	
		A. S. H. V. E. Lab. Results		Heilman	A. S. H. V. E. Lab. Results	
		U	H	H	h_o	H_1
Horizontal	¾	2.84	0.788	0.765	1.68	0.244
Horizontal	1	2.72	0.934	0.924	2.52	0.271
Horizontal	1¼	2.63	1.13	1.16	1.74	0.305
Horizontal	4	2.36	2.78	2.79	.....	.....
Vertical	¾	2.71	0.749	.....	1.88	0.240
Vertical	1	2.63	0.903	.....	2.00	0.251
Vertical	1¼	2.55	1.10	.....	2.00	0.306

U = Btu per hour per square foot per degree Fahrenheit steam to air; for bare pipe.
H = Btu per hour per foot length per degree Fahrenheit steam to air; for bare pipe.
h_o = Btu per hour per square foot per degree Fahrenheit insulated surface to air; for covered pipe.
H_1 = Btu per hour per foot length per degree Fahrenheit steam to air; for covered pipe.

TEST SET-UP AND PROCEDURE

All tests were made in the psychrometric chambers of the Laboratory in the Pittsburgh Experiment Station of the United States Bureau of Mines where surrounding atmospheric conditions could be accurately controlled. This room is located in the interior of the building with well insulated walls.

The inside wall surfaces in view of the test pipe were therefore at the same temperature as the surrounding air.

Fig. 4 is a photograph of the set-up used for studying horizontal pipe. Fig. 2 is a drawing of the arrangement of the apparatus for studying horizontal pipe and its least emissivity characteristics. Steam, at a constant controlled pressure, held well within the limits of 0.1 in. of water column, entered the steam separator, A, at B, and passed through the electric superheater, C, to the two test pipes, D and D'.

The condensate was drained from the test pipe at E

Table II

Heat Emission for Bare Copper Pipe, Based on A. S. H. V. E. Laboratory Results

Position	Size (Inches)	U	H
Horizontal	¾	2.01	0.462
Horizontal	1	1.91	0.560
Horizontal	1¼	1.76	0.624
Horizontal	4	1.32	1.43
Vertical	¾	2.02	0.463
Vertical	1	1.92	0.574

U = Btu per hour per square foot per degree Fahrenheit steam to air; for bare pipe.
H = Btu per hour per foot length per degree Fahrenheit steam to air; for bare pipe.

Table III
Value of e for Copper and Iron Surfaces

Surface	e	Authority
Wrought Iron high polish	0.28	Marks Handbook[a]
Cast Iron—bright	0.21	International Critical Tables
Rough Steel	0.94	Heilman[b]
Copper—buffed high polish	0.10	Marks handbook
Copper—buffed	0.167	Hütte[c]
Copper—oxidized	0.57	International Critical Tables

[a] Transmission of Heat by Radiation, Revised by H. C. Huttel. (Marks Handbook.)
[b] Surface Heat Transmission, by R. H. Heilman. (*Mechanical Engineering*, Section 1, May, 1929.)
[c] Des Ingenieurs Taschenbuch, Twenty-second edition.

Table IV
Heat Emission from One-Inch Horizontal Pipe with Various Surfaces in Btu. per Hour per Square Foot of Surface per Degree Fahrenheit Difference Between Steam and Air

Type of Surface	Iron	Copper	Gal. Iron	Brass	Aluminum
Bare as received	2.72	1.91	1.78	1.71	1.93
Buffed	1.85	1.74	.....	.....	.....
Black Duco	2.87	.....	.....	.....	2.88
Lamp Black	2.88	.....	.....	.....	.....
Red Duco	.....	2.89	.....	.....	.....
White Duco	2.88	.....	.....	.....	.....
Aluminum Paint	2.24	.....	.....	.....	.....
Black Duco over Aluminum Paint	2.81	.....	.....	.....	.....
Aluminum Paint over Black Duco	.....	.....	.....	.....	2.19
Alum. Paint over Blk. Duco over Alum. Paint	2.17	.....	.....	.....	.....

and E' through the water sealed traps, F and F', and was collected in graduated cylinders, G and G'. The tops of the graduate cylinders were covered so as to lessen possible re-evaporation from the receiver. A small thread of steam was allowed to escape at H and H' throughout the test in order to keep the system free from air.

Before starting a test the entire system was purged of air, and heated for a sufficient length of time to insure equilibrium conditions. The valves, I and I', were adjusted to give equal steam pressure in both pipes. The electric current through the superheater was regulated to maintain approximately 0.1 deg. of superheat in the entering steam as indicated by thermocouples located at J and K and K'.

Throughout the test, temperatures were observed at points K, L, M, N, and O. Thermocouples K and O, were located in ⅛-in. O.D. copper tubes, with the junctions in the steam inlet to, and the drain from, the pipe. The outside surface temperatures of the test pipes were observed at L, M, and N by thermocouples whose junctions were soldered into holes drilled part way through the walls of the test pipes, care being taken to allow the solder to cover as little of the pipe surface as possible.

During the test, the water level in the water-sealed trap was maintained at a level 0.5-in. below the top of the glass section P of the trap to reduce the steam heated surface other than the pipe itself to a minimum.

Table I gives the heat emission in B.t.u. per hour per square foot of pipe surface per degree temperature difference between steam and air, and the B.t.u. per hour per foot length of pipe per degree temperature difference between steam and air, as determined by the A. S. H. V. E. Laboratory for the bare iron pipe. The table also gives the heat emission for bare-iron pipe as reported by Heilman. The last two columns of the table give the surface transfer coefficients for the insulation surface in B.t.u. per hour per square foot of insulation surface per degree temperature difference between the

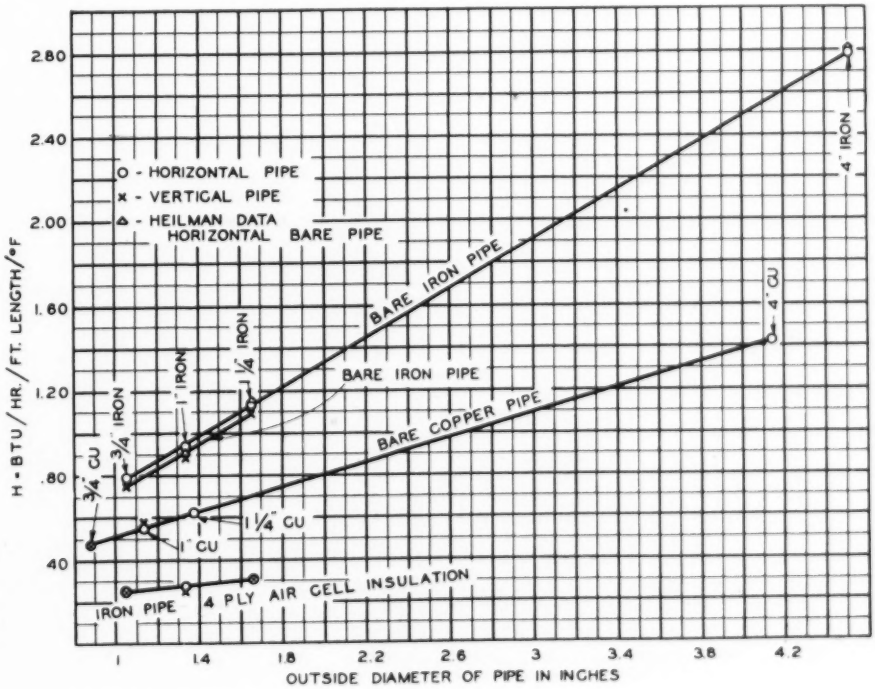


Fig. 3—This chart shows the relation which was found to exist between the heat emission per foot of length of the pipe and the diameter of the pipe

insulation surface and the air, and the heat emission in B.t.u. per hour per foot length of insulated pipe per degree temperature difference between steam and air. Table II gives similar heat emission data for bare copper pipe in the vertical and horizontal positions. Table IV gives the transmittance coefficients for bare, galvanized, aluminum and brass pipe, and for iron and copper pipe with other than *as received* surfaces. These results are for one-inch pipe only.

DISCUSSION OF RESULTS

It was found a small temperature difference exists between the steam and the outside surface of the pipe. This bears out the generally accepted fact that the important factor in resistance to heat flow from a bare pipe is in the transfer from the metal surface to the air, rather than the thermal resistance of metal itself.

The heat transfer coefficients expressed in B.t.u. per hour per foot length of pipe per degree temperature difference steam to air, are plotted in Fig. 3 for bare iron, bare copper, and for insulated iron. When plotted against outside pipe diameter, substantially straight lines result.

For pipe of 1.65 in., outside diameter, which is the outside diameter of 1¼-in. nominal size iron pipe, the bare iron, bare copper, and covered iron, emit 1.13, 0.70, and 0.31 B.t.u. per foot of pipe, respectively. If the comparison is made on the basis of 1¼-in. nominal size, the bare iron, bare copper, and covered iron emit 1.13, 0.62, and 0.31 B.t.u. per foot of pipe, respectively, or the 1¼-in. copper tube emits 54 per cent as much heat as the 1¼-in. bare iron, and 200 per cent as much as the covered iron.

The data show little variation in heat emission from vertical and horizontal pipe. The greatest variation is shown for the bare iron, in which case the vertical pipe shows a lower rate of heat emission. This is contrary to what was expected. Fig. 2 shows the relationship between the heat emitted in B.t.u. per hour per square foot of pipe surface per degree temperature difference steam to air. These curves show a decrease in the rate of transfer per unit area with pipe size.

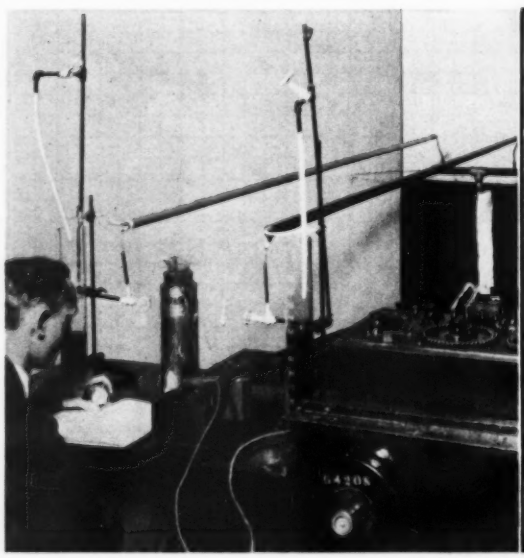
The heat transfer values for galvanized, brass and aluminum pipe, and for the iron and copper pipe with surfaces other than *as received,* show higher rates of heat emission for pipe painted with any kind of pigment paint, than for the same pipe bare. The black, lamp black, red, and white when used on any pipe gave values ranging from 2.87 to 2.89, excepting in the case of the black over aluminum paint, which gives a value of 2.81. A value of 2.88 can therefore be accepted for surfaces painted with pigment paint. The curves in Fig. 2 show a decrease in the coefficient with increase in size of cylinder. The value of 2.72 for bare iron as received seems low when compared with 2.88 for the same surface painted. Upon examination of the pipe as received, it was observed that while the greater part of the surface was black, many small areas were bright metal.

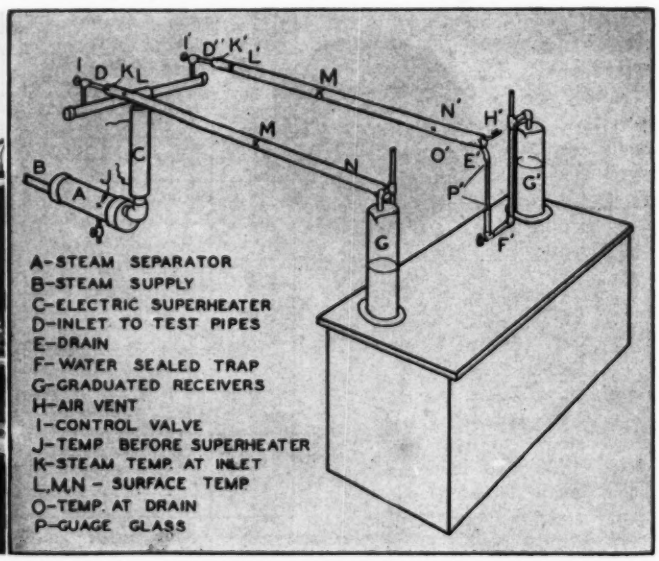
A comparison of the value of 1.93 for bare aluminum and the values of 2.17 to 2.24 for aluminum painted surfaces, whether applied directly to the metal or over other paints, shows that aluminum paint has an emissivity not much greater than bare aluminum.

A comparison of the values for copper as received, copper buffed, galvanized, brass and aluminum shows that 1-in. pipe of any of these metallic surfaces give values ranging from 1.71 to 1.93. The galvanized and brass pipe were washed with gasoline to remove oil and grease deposits found on the pipe as received.

Fig. 4—The photograph at the lower left shows the laboratory test set-up for determining the heat emission from horizontal pipe. The pipe is shown clearly as well as the graduated cylinders into which the condensate was discharged and measured

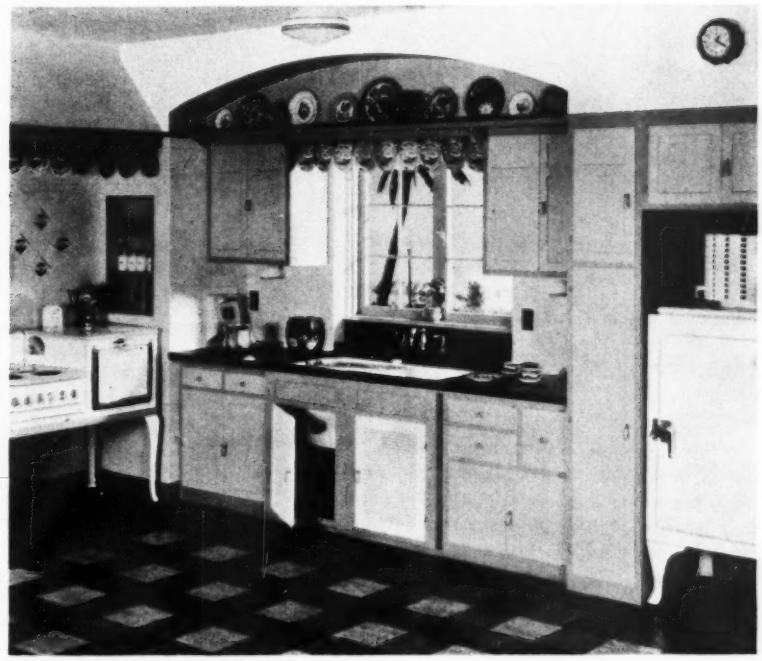
Fig. 5—At the lower right is shown a diagrammatic illustration of the test set-up. By referring to the letters and the legend in this illustration, the items in the photograph may be identified





A New Group Sales Plan for the Kitchen

Here is an attractive profit opportunity for the alert plumber-dealer



By C. M. SNYDER*

MANUFACTURERS of kitchen equipment are learning a lesson from the excellent publicity job accomplished during the past several years by leading manufacturers of plumbing materials in improving the general tone and architectural decorative treatment of that once neglected and all-important room of the house —the bathroom.

During the past several months, forces have been at work in an effort to formulate a program through which manufacturers of kitchen equipment could more readily develop the desirability for beauty and efficiency in the workshop of the home—the kitchen.

A thorough study of the situation discloses the fact that the average American housewife has subconsciously realized a "certain something" badly lacking in her kitchen set-up. In the rapid growth of appreciation for better architecture in this country during the past several years, we have witnessed a progress in American home building and an uplift in public taste that is far more marked than in any decade in our artistic growth.

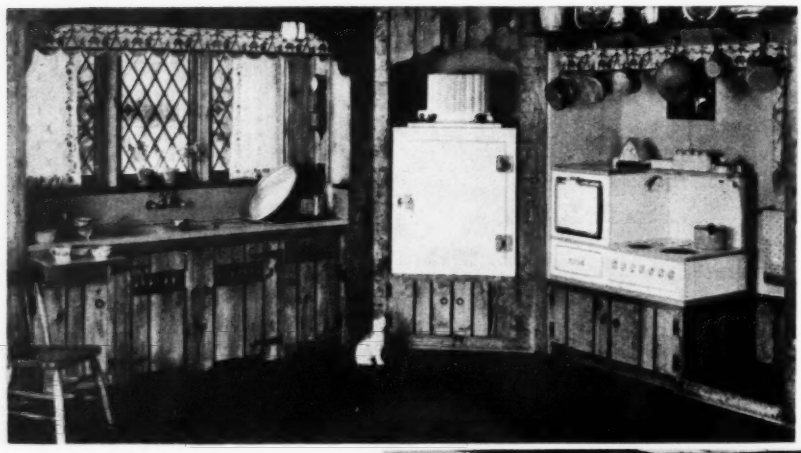
We have seen a marked and encouraging attention given by our leading architects to small house design. The foremost designers of the country have shown a decided tendency to aid in stimulating an increasing public appreciation of good design and efficient planning that is meeting both the demands and changes in American home life and habits as well as the average American pocketbook.

Because of this very progress, it is perhaps pardonable to suggest that, naturally, every function and purpose of the complete home could hardly be achieved at once, and that, if there is any one element that seems to have received a minimum of study in this general architectural advancement, that element is, and long has been, the kitchen.

Possibly the explanation for this tendency may have been a misconception on the part of the architecturally-minded individual that the kitchen, after all, was too prosaic, unstimulating; that it belonged to the service end of the household routine. At any rate, whatever the reason, our severest critics cannot help but agree that at least 98 per cent of domestic kitchens are woefully lacking in efficient equipment as well as the effort to group this equipment in a pleasing and step-saving setting. What attempts have been made in the past several years to improve the general tone of the kitchen have become prosaic or so rubber-stamped that this all-important room continues to spell only "workshop" to the housewife. It is this factor which must be changed and which can be changed to the mutual advantage of both the home owner and the manufacturers building and merchandising worthwhile kitchen equipment.

It is not in the least inconceivable that, through proper co-ordinated effort on the part of architects, manufacturers and specialty dealers combined with proper advertising and publicity activities, the American housewife can be rapidly made "kitchen conscious," or rather, let us say, "*better* kitchen conscious," for she is already,

* Mr. Snyder is president of the Walker Dishwasher Corp., Chicago, Ill.



These photographs show two layouts that make the kitchen a modern laboratory of efficiency and a room of beauty

unfortunately, too conscious of her present kitchen as a room of disagreeable drudgery and monotony—as the darkest cloud on her busy workday horizon.

To conceive of this room, therefore, as a modern laboratory of efficiency—a room of beauty and charm of which she will be as proud as of any other room in her house—is the task before us. By stressing the great and growing need for improved electrical tools to accomplish the humdrum tasks quickly and efficiently, and then to so group these tools that they bear a proper relation to one another in the kitchen routine—to the end that needless thousands of steps may be saved in a day—and, in turn, surrounding this efficiency and modern planning with individualized and beautiful architectural treatments and decorative effects, is a worthwhile and definite objective.

PROFIT OPPORTUNITY FOR MERCHANT PLUMBER

Having examined briefly, therefore, the background of the "better kitchen" idea, let us look into its profit-making angles from the standpoint of the reliable manufacturer and dealer.

If it is true that we can awaken a consciousness and desire for improved kitchen set-ups, what a tremendous market opens itself to the alert plumbing contractor. For, after all, much of the kitchen equipment is being, and more can be, merchandised by our trade if a workable merchandising tool is presented. Millions of homes await improved radiation, the electric dishwasher-sink, the mechanical refrigerator and many electrical tools heretofore considered largely the province of other trades.

The merchant-plumber with his well-equipped showroom can add profit-making items provided he maintains a sales organization that will reach the hundreds of prospective homes in his community with a simple program for a complete remodeling job.

Investigations thus far made have proven to the satisfaction of individuals interested in this research that it is very often much easier to interest the housewife in the complete remodeling of her kitchen, than it is to sell her an individual appliance. She senses immediately the value to be gained from the "complete" idea, whereas the sales psychology behind the purchase of an individual piece of equipment is so often defeated by the limitations of the individual appliance when fitted into the household budget. At any rate, having talked in terms of a $1,000 remodeling job, it becomes much easier to conclude the sale of a $200 appliance! The individual who is prevented from making the complete outlay for an entire kitchen set-up is nevertheless interested in the kitchen story and can readily be made to see the advantage of purchasing one piece of equipment at a time, provided the ultimate goal and background of the complete kitchen is kept before her so that the remodeling job is more or less a continuous procedure and, in the end, provided she works on a preconceived plan, she will have a kitchen more nearly approaching her ideal than she might have should individual items of equipment be purchased haphazardly with no thought of their ultimate relation to one another in the planning arrangement.

This means, of course, that the individual salesman of kitchen equipment must take upon his shoulders a new

schooling. He, together with the manufacturers supporting his activities, must become somewhat experts in kitchen layout, so that their sales story will be based upon a broader conception of the ultimate or complete kitchen. He will find himself rapidly building up a tremendous amount of interest and good will among his prospects, to the end that, having sold them one appliance, he has a sound and worthwhile reason for continuing his contacts with such customers until he has completely revolutionized their kitchen set-ups. By using the theme of the complete kitchen throughout his selling activities, he avoids becoming the nuisance which condemns the efficiency of the aggressive salesman by too frequent call-backs. The profession of group selling—if we may be permitted to call it such—will demand a higher type of salesman and, accordingly, will attract a quality of manpower always difficult to secure in the job of house-to-house canvassing. With proper sales training this "group selling" plan will mean less turnover on the dealer's sales force, because the individual salesman has been given a much broader conception of his opportunities by removing the stigma of "peddler."

In test sales recently made among groups of large builders of small homes, the foregoing kitchen story has already registered in an important manner. Such builders have long recognized the importance of the kitchen and have simply been looking for a concrete plan that would achieve their ideals. In the homes built by Realty Associates at Stewart Manor, Long Island, the all-electric kitchen, properly laid out, has been made an important selling tool, and the enthusiasm of 15,000 people who passed through the model home at the time of its opening confirmed the impression that the kitchen could be developed into the most attractive closing arguments in the sale of a home.

While this group selling to builders was possibly the first step in the general program for securing more intense kitchen consciousness among the public, it is the millions of existing homes ready for remodeling and improvement that should intrigue the alert merchant-plumber to a new and more intense interest in a new selling opportunity. It is only necessary for him to select and secure franchises from the manufacturers of equipment which he feels are most advantageous to himself and his customers, to begin activities at once.

DISPLAY ROOM MODEL HELPS SALES

As a starting point, the alert merchant plumber should first arrange to install in his showroom a complete model kitchen along the lines indicated in the photographs accompanying this article, to which prospects can be brought to visualize first-hand the import of the idea. Mailings and telephone campaigns will prove far more effective in getting prospects to view such a setting than is usually accomplished by such activities, because of the intense interest of women in general kitchen improvement. And if the plans revolving in the minds of manufacturers at present are consummated without too much lost motion, he will find himself well supported in his activities by advertising and publicity efforts destined to make the housewife more interested in her kitchen and its proper equipment, than she is at this time in any other room in the house.

Two more kitchen designs that will make the housewife as proud of her kitchen as any other room in the entire home

Fig. 1—Here is an example of lead welding where pipe was installed for condenser boxes

How to Make Lead Welds

By JAMES FLETCHER

THERE still remains in the minds of some contractors the idea that the fusion welding of lead is lead burning. Just recently we received a request for information from one of our readers in Canada which read as follows: "Can you give me any information on lead burning with the oxy-acetylene torch? I have done a little work along this line, but I want to know more about the lining of tanks and pipe connections, insomuch as a new science building is being started here as an addition to our university and I expect that there will be some burning to do."

Strictly speaking, the term lead burning is quite incorrect as the lead is not burned at all and the operation produces a true fusion weld entirely analogous to welds made in other metals, such as steel.

Because of the low melting point of lead, only a very small flame is required. Welders will experience little difficulty in learning how to work with lead. To be sure, the technique is somewhat different from that required for steel. In many instances the plumbing and heating shop that does welding is expected to handle all lead work just as it would any other metal.

Properties of Lead

Pure lead is a heavy, soft metal, dull gray in surface appearance, but exhibiting a bright metallic lustre on a freshly cut or scraped surface. It has very little mechanical strength and consequently care must be taken to support all large pieces or they will collapse under their own weight.

Where greater strength is required, lead containing antimony is used. The greater hardness of this antimonial or chemical lead is at once evident when an attempt is made to scrape the surface. The freshly scraped surface of antimonial lead has a silvery appearance compared with the bluish tinge of pure lead.

The dull gray surface appearance of lead is due to a coating of oxides and other compounds that must be carefully removed before welding. For preparing the edges and surface of lead, special tools known as scrapers are available. The metal is so soft that the preparation of pieces for welding is a relatively simple matter. The main point is to clean the surface so that thorough fusion will result.

As far as actual welding is concerned, the most important property of lead is its low melting point. This means of course that only a small flame is required. In fact lead melts so easily even with a small flame that the technique of blowpipe manipulation is quite different from that used with any other metal. Best results are obtained with a flame con-

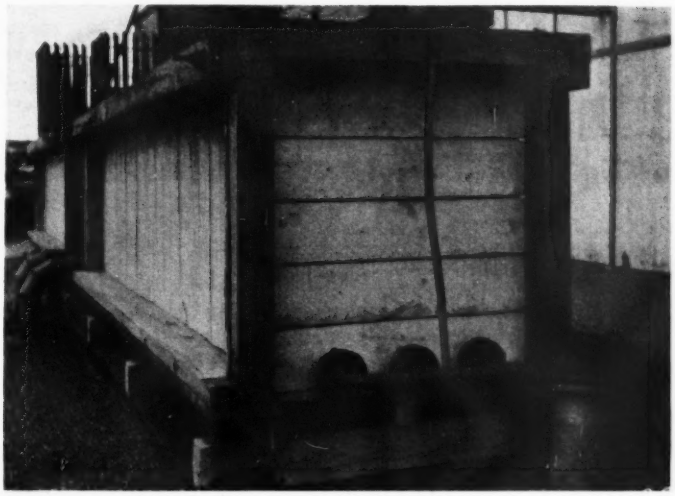


Fig. 3—This is another view of the condenser shown in Fig. 1. Additional lead welded piping is seen

taining a slight excess of acetylene.

Holding the blowpipe so that the flame is almost perpendicular to the surface of the work, and with the inner cone almost touching the surface of the metal, heat the lead until it just melts, then lift the blowpipe quickly in order to prevent excess melting. This will require considerable practice until the operator learns to recognize the exact point of fusion. Lead welding is a delicate operation. The blowpipe flame is directed on the metal for an instant and quickly flipped away. In this way it is possible to control this easily fused metal. Light lead sheet with flanged edges may be welded without the addition of rod, but for most work additional metal is required.

The welding rod may be made by cutting sheet lead into strips, or by melting some lead and molding it into rods of convenient size. Where much work is done, special molds can be obtained. Probably the simplest method is to use a short length of angle iron, melting the lead into the vee of the angle by means of the blowpipe, thus forming a bar of any desired size.

Fig. 2—This shows a built-up flanged fitting made of lead

In adding metal from the rod, the blowpipe flame should be played simultaneously on the rod and along the edges of the work to be welded so that they will reach the fusion point at the same time. Thorough fusion is just as essential in lead welding as it is in welding steel. While high strength is obviously not a factor in lead welding, the welds must be perfectly tight, and this is of course not possible without thorough fusion.

Welding Sheet Lead

In most work with sheet lead, such as tank linings, lap joints are used. The sheets are laid out with edges overlapping from ¼ to ½ in. The overlapping surfaces of both sheets must be thoroughly cleaned in addition to the exposed edges of the sheets. Usually forms must be used to support the sheet as the metal is too soft to remain in position unsupported. After the lap joint is in position, the joint should be tapped lightly with a wooden mallet in order to bring the sheets in close contact. Each edge of the lap is then welded, using rod.

Where it is not possible to work from both sides, as for example when a lining must be made in place, the butt weld is preferable. The sheets are carefully trimmed to size and the edges beveled just as in working with steel. The sheets are supported in position and then tack-welded to maintain alignment. Any shaping that may be necessary in lining up the sheets can be easily done with a wooden mallet.

Vertical seams should be started at the bottom, the work progressing upward.

Lead Pipe and Fittings

Lead pipe is obtainable in a variety of sizes and weights, and welded joints may be made by following the same general methods of design that are used in welding steel pipe.

Specials of lead pipe may be made very easily from sheet lead by cutting to size, shaping around a wooden or metal form, and then welding the longitudinal seam.

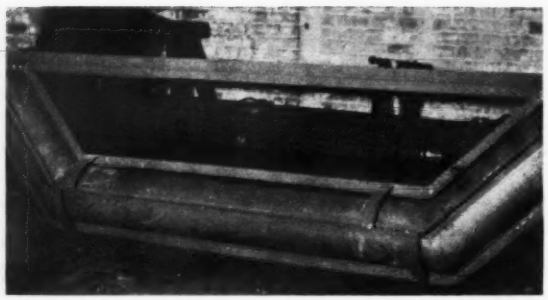


Fig. 4—Above, in this installation, after the lead piping was welded in place, an angle iron framework was made in halves by welding and later it was bolted together around the lead pipe to act as both a support and as a protection against injury

Flanged joints are used quite extensively in lead pipe work in industrial plants, particularly in the chemical and paper industries. The flange is molded so as to slip over the outside of the pipe, and has a bevel on the inside edge of the ring so that it can easily be welded to the end of the pipe.

Due to the low melting point of the lead, holes for branch connections are made by simply melting through the pipe wall with the lead welding blowpipe flame. Thus the welding blowpipe also assumes the functions of the cutting blowpipe. The melted edges are of course scraped clean and properly shaped before welding. Owing to the softness of the metal, the parts may be made to fit exactly with very little effort. Fig. 6 is a splendid example of the results that may be obtained with careful workmanship. This flanged tee was made entirely with the oxy-acetylene welding blowpipe. Flanges were welded on, the hole was melted for the branch, and then the branch was welded in. In metal of this thickness, welding may be done in two stages. The vee is first welded almost level with the surface; and the joint is then finished, using a rather different blowpipe movement which produces the characteristic over-lapping ripples.

Recently a plant in the process industries had a need for several small tanks for storing sulphuric acid. These tanks were covered with steel shells to support and protect the soft lead lining. One such tank, used to collect acid fumes prior to dispersal through a ventilating chimney, was constructed in this manner. The inner lining was made up of $\frac{3}{16}$-in. sheet lead. A $\frac{3}{16}$-in. steel shell and stand were also fabricated by oxwelding. The piping for this tank, as well as over 10,000 ft. of pipe used in connection with alcohol extractors, was all fabricated by oxwelding. Sheet lead of the required thickness was shaped and then the longitudinal seams were welded.

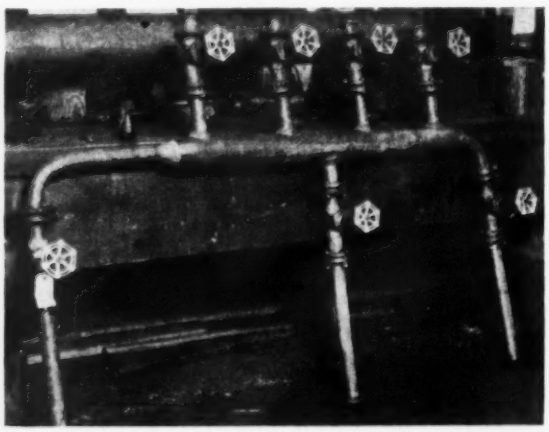


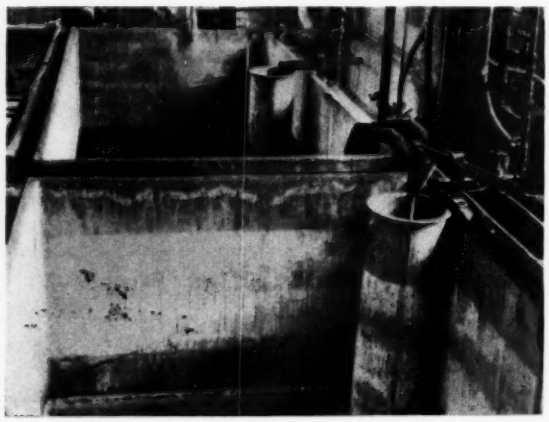
Fig. 5—Above, here is a lead header which was constructed for the handling of corrosive liquids

Fig. 6—Below, this shows the blow-pipe and welding rod position for welding. The solid lead tee is an excellent example of lead welding

After this lead piping was welded in place, an angle iron framework made up in halves by welding, was bolted around the lead pipe, to act both as a support and as a protection against injury. This is illustrated in Fig. 4.

The contractor was also called upon to fabricate a lead-lined valve for use in connection with this lead piping. Using an oxy-acetylene lead welding blowpipe, lead was applied to all inner surfaces, until the entire inside of the valve, in both open and closed positions had a solid lead lining suitable for the service expected of it.

Fig. 7—Below, the procedure for welding lead lining in tanks such as these is described in this article



Co-operate on Gas Sales

By P. W. DONOGHUE

THE National Association of Master Plumbers was organized in the City of New York in 1883. The Association was made up at that time of delegates from local organizations of master plumbers from 27 of the leading cities of the United States. I would like to say that the organization from the City of Boston joining in the National at that time was formed in this city in the year 1845. We have maintained our national affiliation since 1883. We are now organized in every state in the Union. Today we have a membership of approximately 10,800 master plumbers. We have maintained this membership throughout this general depression. We have today a greater membership than we ever had before.

Our national association was formed for the following purposes: First, for the advancement of sanitation; second, for the encouragement of sanitary laws; third, for the improvement of plumbing appliances and plumbing work; fourth, for the education of the members of the craft in all that pertains to the betterment of plumbing; fifth, for the education of the members of the craft as to the best methods of conducting such a business; sixth, for the establishment of harmonious relations between our membership, architects and engineers, our source of supply and labor; and seventh, for the education of the apprentice and the establishment of an apprentice system.

Our national organization has a scholarship fund of $150,000, in order that we may maintain at the Carnegie Institute of Technology at Pittsburgh, Pa., eight young men, giving them a full college course and educating them in the science of plumbing. We give these young men approximately $700 a year. They are selected in public competition throughout this country.

Our national headquarters are located in the City of Washington, District of Columbia. We have no paid men in connection with our organization, with the exception of the office force in headquarters. All national officers and all committee men serve without compensation.

PROTEST UTILITY METHODS

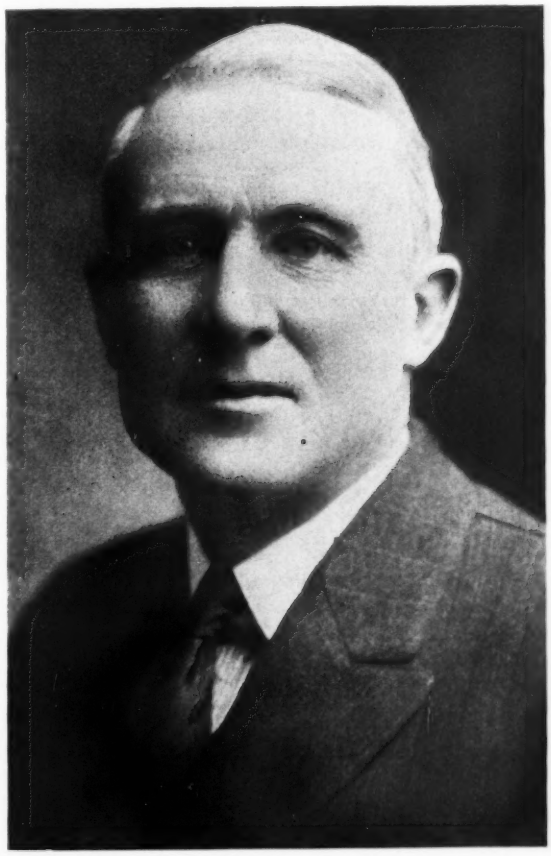
I felt that I should give you these facts so that you would know something of our organization. I know that most of you men are connected only with the gas industry. For many years many of our local associations throughout the country have been protesting the activities of the gas companies in their communities, complaining that the gas companies were selling gas appliances at a price which eliminated them from competition. We, as a national organization, have protested many times against this unfair practice.

Last year the American Gas Association adopted six merchandising principles applying to the sale of gas appliances. On invitation from the American Gas Association the National Association of Master Plumbers appointed a committee to discuss these principles with the Gas Association. As a member of that committee, I visited the City of New York and with other members of the committee attended the conference. After reading over these principles, the committee approved of them and submitted them to the forty-ninth annual convention of our national association held in Milwaukee last June.

Our national convention approved these principles and instructed their national officers to use their best endeavors to have our local associations throughout the country contact their local gas companies and arrive at an understanding on the sales of gas appliances based on these principles.

As national president it was my duty this year to contact our membership throughout the country and give wide publicity to the principles adopted. This I have done by publishing the principles complete in our Convention Proceedings. I have also sent one communica-

(Continued on page 90)



P. W. Donoghue, president, National Association of Master Plumbers

Excerpts from address delivered before the New England Gas Association, at a recent meeting held in Boston, Mass.

"The amount of cooling required is variable, depending upon individual preferences"

This article by S. M. Anderson touches on some of the fundamental technical or engineering considerations which must be taken into account when you —

Prepare for the Business of Providing Summer Comfort

THE cooling of a home during the summer months offers other problems to be dealt with aside from those pertaining solely to humidity control.

Usually the volumes of air circulated for cooling purposes run to much larger quantities than for heating and humidifying. For example, where a home might require five thousand cubic feet of air per minute for cooling, it would be possible to heat and humidify it with only two or three thousand cubic feet of air per minute. But in general the use of large quantities of air both summer and winter makes it possible to obtain uniform temperatures about the house, making each room less affected by exposure. Introduction of the air in winter time would then be at lower temperatures.

In other instances it has been found to be more desirable to the home owner to provide a fan apparatus with two speeds so that full cooling volumes can be circulated in summer time and smaller volumes of air in winter at the reduced speed of the circulating fan.

THE AMOUNT OF COOLING

The amount of cooling required is variable, depending upon individual preferences. There are some who desire a system that will cool all of the rooms of a house; others are satisfied to condition the air in only the dining and living rooms or possibly in only one room. Moreover, there are as many ideas as to how much the temperature of the refrigerated rooms should be reduced below the outside temperature as there are persons wishing to

install cooling systems. In such matters, the air conditioning engineer is usually guided by the wishes of the individual.

In some instances an acceptable system can be obtained by providing adequate air circulating machinery which operates only in the coolness of the late evening, blowing the hot air of the daytime out of the house and replacing it with cool air from the outside after the sun has gone down. Such an arrangement cannot, of course, equal the effectiveness of a true refrigerating system.

If cold or chilled water is used for cooling, it may be supplied by a refrigerating system, or, in some localities, by a well driven into the ground, thus tapping a supply of cold water conserved from the rains and snows of the previous winter.

Spring water and city reservoir water have possibilities for use in some places, but on account of the large quantities needed, it is generally impracticable to rely upon these sources.

When it is considered that the average house would require approximately seventeen gallons of water per minute for adequate refrigeration (all of which must be wasted if drawn from a city reservoir), it is at once apparent that a large number of homes using water at this rate would seriously endanger a city's supply during the hot summer months when the rainfall is often scant. Furthermore, by the time water from a common reservoir has been stored in auxiliary standpipes and interconnecting pipe lines for a period of time, it becomes warmed above the temperature where it can be utilized for effective cooling. It is not uncommon for such water to reach a temperature of 60 deg. Fahr. to 65 deg. Fahr. during July and August, which is about ten or fifteen degrees too high. For these two reasons, the possibilities of the use of city water as a cooling medium are remote, except in connection with refrigeration.

USE OF A DEEP WELL

Deep well water seldom goes over 55 deg. Fahr., even at the end of the summer, and in localities as far south as Washington, D. C., this offers a solution to the problem of household cooling, provided one is fortunate enough to strike water at a reasonable depth. A deep well supply of water is usually simpler than refrigerating equipment. The question of noise from the well pump need not prove a troublesome one if care is taken to isolate the pumping apparatus and prevent it from transmitting its vibration to other parts of the house. It is usually better to locate the pump outside of the house, running a short pipe line underground to the cooler within the house itself, but experience has shown that a successful installation can be made, having the pump and well within the basement of the house.

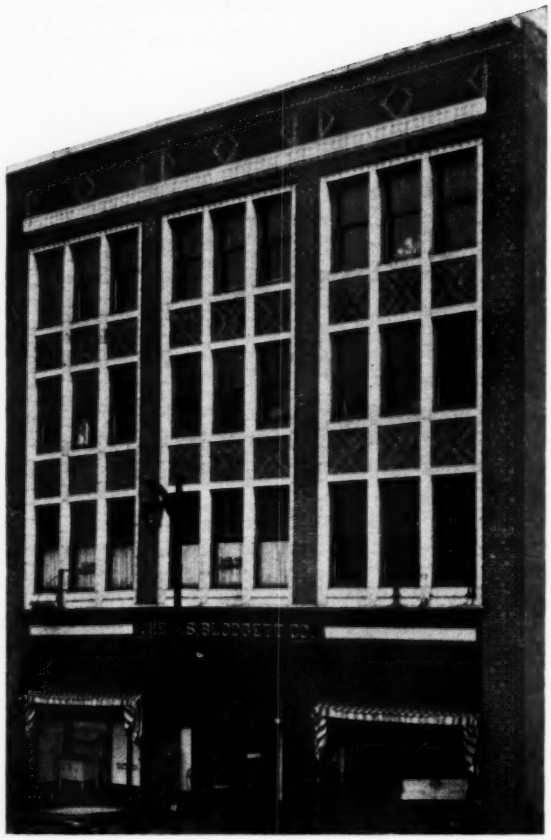
For perhaps forty days of the summer, depending upon the locality, actual refrigeration would be necessary for comfortable conditions. During the remainder of the warm weather it might well be sufficient to operate the fan system alone, keeping a good circulation of air passing through the house, drawn from the outside through the basement and discharged to the outside from the open windows on the upper floors.

Whenever a hot summer day is succeeded by a cool evening, the apparatus can be run on the setting of dampers, providing outside air. On the other hand, during periods of heat, when refrigeration is necessary, the system may be set to the recirculating air cycle, with all of the windows tightly closed.

There are ordinarily so few people in a home, that it is not considered necessary to admit the usual amount of outside air into the recirculating system. As a matter of fact, enough natural leakage will usually occur to amount to, say 20 per cent, and the only advantage gained in bringing in the air mechanically would then be that a definite, known quantity of outside air can be admitted. It is estimated that the mechanical admission of outside air puts the house under a slight pressure—enough to balance out and prevent leakage through the walls, due to natural windage.

"Whenever a hot summer day is succeeded by a cool evening, the apparatus can be run, thus providing outside air"

78 Years of Progress



FOR more than a quarter of a century, or, to be exact, since 1906, the G. S. Blodgett Co., Inc., of 190 to 194 Bank street, Burlington, Vermont, has been subscribers for and careful readers of DOMESTIC ENGINEERING for the express purpose of keeping pace with the evolution of the plumbing and heating industry.

This company is one of the few enterprises in Burlington which has been doing business under the same name for more than 75 years. So far back as 1854 Gardner S. Blodgett organized the G. S. Blodgett Company and opened a jobbing and retailing business in sheet and galvanized iron, hot air furnaces, plumbers' supplies, stoves and ranges, as well as a plant for the manufacture of a portable bake oven, which he had invented. Later when steam and hot water house heating boilers were placed on the market, the Blodgett company added them to its line.

At the outbreak of the Civil War, Mr. Blodgett volunteered and he served throughout the entire war as assistant quartermaster and assistant commissary of subsistence. He was commissioned by President Lincoln as captain in 1861 and brevetted major on March 16, 1865, for faithful and meritorious service. Major Blodgett had a war record excelled by few. In addition to his regular duties in the quartermaster's department, he selected the site, purchased the ground and laid out the National cemetery at Annapolis, Md.

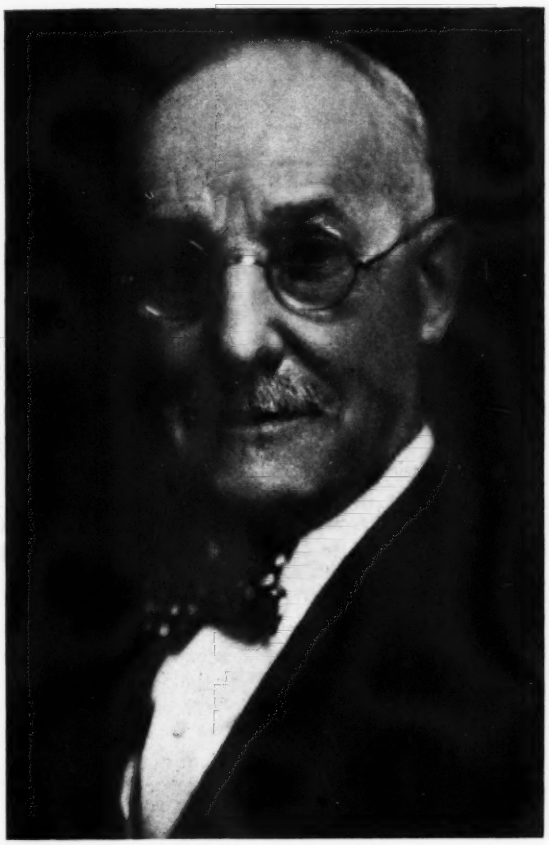
FOUNDER FOUGHT IN CIVIL WAR

Six months after the close of the war he returned to Burlington, Vermont, and continued his business on College street, where he occupied the same store building for 47 years. He enjoyed a very large and profitable trade, owing to the fact that his honorable business methods and business energy commended him to public confidence and patronage. During some of these years he was assisted by Edward Manor in carrying on the constantly growing business. This assistance lasted until Mr. Manor's death, which occurred in 1885.

In 1886, George H. Holden came to Burlington and entered into the business in which he remained active until his retirement which occurred in 1916. J. S. Patrick left his store in Hinesburg, Vt., in 1892 in order to join the Blodgett company. When Mr. Holden retired in 1916, Mr. Patrick purchased his interest in the company and he is now its president.

The business continued to grow and it was during this period that the fine structure at 190 to 194 Bank street was built as the business home of the G. S. Blodgett

The G. S. Blodgett Co. has made many of the largest plumbing and heating installations in New England. The Burlington, Vt., Junior High School at the right is one of them



John J. Raine is in charge of plumbing and heating operations. He was trained by his father and is now training his son. At extreme left is the G. S. Blodgett Co.'s building

Co., which is now one of the largest retail plumbing and heating establishments in the northern part of New England as well as one of the most complete housefurnishing stores in that part of the country.

In 1917 the business was reorganized. On this occasion Roy L. Patrick joined his father in its management and was elected treasurer of the company. Since then he has devoted much of his time and effort to the steadily growing oven business which has reached a nation-wide—if not indeed a world-wide—distribution with warehouse stocks in Chicago and San Francisco.

The Blodgett company has installed many of the largest plumbing and heating systems in New England and the East during its existence, some of the most notable being those in the Fort Ethan Allen in 1893, the U. S. Barracks at Plattsburgh, N. Y., several large hotels in the Adirondacks, including the Lake Placid Club, Paul Smiths, and Hotel Flanigan, Malone, N. Y.; Hotel Rogers, Lebanon, N. H.; Hotel Barre, Barre, Vt.; the State House at Montpelier, Vt.; the Hospital for the Insane, Waterbury, Vt.; the State Tuberculosis Sanitarium at Pittsford, Vt.; the United States Post Office at Windsor, Vt.; the Medical College Building, the Old Mill, the Robinson Hall, the Ira Allen Chapel, and the Robert Fleming Museum of the University of Vermont; the City Hall, the Burlington Junior High School, the Nazareth School, the Masonic Temple, the Hotel Vermont, the Union Station, the Flynn Theater and the Chittenden County Trust Building, all in Burlington, Vt.

THREE GENERATIONS HANDLE PLUMBING

All of the large plumbing and heating installations handled during the past few years have been done under the direct and personal supervision of John J. Raine, vice president of the company, who started to learn his trade when a mere boy in 1885 under Major Blodgett. Beginning at the bottom he worked his way up to the head of one of the largest plumbing and heating departments in New England. Mr. Raine has been a member of the American Society of Heating and Ventilating Engineers since 1912. Mr. Raine's father was in the employ of the Blodgett company as a plumber for many years, and at the present time Mr. Raine has the valuable assistance of his only son, Paul, who is also a plumbing and heating engineer. Representatives of three generations of the same family have thus been connected with the plumbing and heating department of this concern.

To furnish room for the expansion of the steadily growing business a large four-story building was erected in 1925 at 53 Maple street, Burlington. The oven factory was moved to this new site, and the Blodgett Supply Co. was organized and established in this new building to serve the wholesale customers in the plumbing and heating supply line. This venture proved such a success that it became necessary to open a branch house in Plattsburgh, N. Y., to take care of the company's customers in that part of New York State.

The organization and establishment of this new company gave the old established company a chance for further expansion at 190-194 Bank street, where new lines were added to the plumbing and heating contracting business.

The Blodgett company employs about one hundred men, among them many who have served the company for periods ranging from twenty to fifty years, a record which to some extent may explain the success of the organization.

Readers Discuss a Half Century of Plumbing Progress

And Jere L. Murphy of New York City answers their comments

To the Editor

I have read with considerable interest Mr. Jere L. Murphy's article in your issue of April 2, entitled "A Half Century of Plumbing Progress." To me it is of peculiar significance that stone slab drains were installed in New York in the 70's. This practice was simply the continuation of methods handed down through generations since early colonial days. The fact that Manhattan Island is a rocky, hilly, well drained piece of land made for simplicity in drain construction.

The early experiences related concerning trap vents are in almost exact accord with those related by the late Mr. David Whiteford, Mr. J. J. Wade and other pioneer plumbers in Chicago. Mr. Whiteford often told with evident delight, how he discovered the reason for siphoning out the water seal in a closet trap on the second floor of a fine residence. In those days a 4-in. hand made lead soil pipe was run up to the floor, a P- or S-strap was wiped in, and the closet was set in putty. While testing out a newly installed pan closet,—which was considered very fine—he noticed the water all left the trap. In a spirit of inspiration, or desperation, as you will—he jabbed a tap borer into the crown of the 4-in. trap. Immediately air rushed in, siphonage stopped and a discovery was made. Afterwards he said he installed a ½-in. lead pipe from the crown of the trap to the atmosphere which worked satisfactorily for a brief time. Eventually, a scum formed at the connection and the vent was a vent no more. From such experiences there gradually developed our present standard method of venting for the protection of trap seals.

The increased height of buildings in recent years has developed problems in venting which have been solved by reason of experience rather than by means of formula developed otherwise.

The movement of a falling column of water and air in a vertical pipe anywhere from 300 ft. long to twice or three times that length is something entirely outside the possibilities of research in modern laboratories. For that reason engineers had no guide, and plumbing contractors only their experience to rely upon when designing a waste and vent system for tall building work.

The necessity of vents for the protection of trap seals is so obvious to anyone having even a rudimentary knowledge of physics that further comment is unnecessary.

Air compression in soil and waste pipes is a source of much trouble for the contractor and designer, who because of lack of knowledge fails to provide means for the rapid and complete separation of air and water at the foot of a vertical line and the discharge of the released air.

Experiments conducted at the University of Illinois in 1910 by Harry Y. Carson demonstrated the necessity of providing a relief vent at the foot of a vertical line, and that its proper location should always be in the bend.

Experience has demonstrated that a main vent pipe should be as large as the soil or waste pipe which it serves in buildings exceeding 16 stories, and that it should be correspondingly larger as the height increases. Much has been written on the subject. Fairly complete descriptions of problems of this sort may be found in the year books of the American Society of Sanitary Engineering.

Venting in ordinary buildings is a simple and well standardized practice. It is a much more complicated matter in very tall structures.

Wind velocities sometimes play havoc with trap seals as the wind shifts from one point to another. Roof conditions vary as do styles in millinery. Each job is a separate and distinct problem.

To the designer, I would say—when in doubt, stop! Ask someone whom you know has had experience, not only in designing and installing, but in maintenance.

Loop venting is mentioned in Mr. Murphy's article, but its meaning is not sufficiently illustrated to warrant much discussion. It can be made safe under certain circumstances, but only through the good judgment of the plumber who designs and installs it.

Loop venting, as commonly known, is not dependable in all situations and under all conditions, for the reason that the principles of physics are so rarely understood by those who design or install such a system that the *main spring,* as it were, is left out.

It is better to stick to that which is dependable than to experiment with something else.

Chicago. Thomas J. Claffy.

My Dear Mr. Claffy

I agree with you that the increased height of buildings has brought about a change in our industry. I believe it is only by experience in the development in our industry that the best interests of the American public can be served. After all, laboratory tests are all right, but without practical experience as to what takes place in the actual installation of plumbing, piping laboratory tests would be of little value.

I also agree with you that it is only through the cooperation of engineers, journeyman plumbers and employing plumbers that the best results can be brought about. I agree with you that in venting, the crotch of the bend where the waste pipe or soil pipe changes from vertical to horizontal, is the proper place to start the vent. The reason for this is that the water falling through the waste pipe forces some of the air ahead of it. This air hits that bend while it is being forced ahead of the water and the air then explodes at the bend. If the vent is connected to the crotch of that sweep or bend, however, it will immediately take away that excessive air pressure.

I also agree with you on the sizing of vent pipes. In fact, I will go further and say that as buildings are made higher, the vent pipe should be larger than the waste pipe at some point. On this question I believe greater stress should be laid on the running of vent pipe to see that it is connected at the proper locations. I also agree with you that it is necessary to have experience in the maintenance of plumbing. I am personally opposed to any system where a pipe acts as a double duty pipe, that is, carrying waste water in one direction and conveying air either with or against the current of that water. The principal reason for my opposition is that the diameter of the waste pipe changes after it has been installed for some time, and the man who designed the plumbing system has no way of telling what the interior diameter of that pipe will be two years after it has been installed. And, surely, there will come a time in systems of that type when the pipe no longer will be able to carry air and water and it will in the end serve as a one duty pipe and convey only water. I do believe that fluids, regardless of what type, should not run through the vent pipe, so there should be no possibility whatever of decreasing the diameter of the vent pipe. I know you will agree with me on this.

I believe that the job for the plumbers of the country is to pick out the best system and stick to it. And, I really believe that the better system is the continuous waste and vent system. I believe that every trap should be protected against syphonic action or back pressure by insuring the presence of air at about the same pressure at the inlet and outlet sides of the trap. I believe this can be done only by taking great care in designing venting systems, and that up to date, as far as we know, on the plumbing question the above can be done only by eliminating the loop or so-called circuit vent. This is due to the fact that in these systems, at its best, the pipe acts as a double duty pipe.

Wind pressure has a great deal to do with plumbing systems in the top stories of buildings, especially tall buildings, or, especially so when the vent or waste lines are carried up and terminated close to walls of adjoining buildings or adjoining offsets of the buildings which they serve, the wind pressure will strike the wall and by its force the air is carried down in the pipe. This causes in some cases syphonic action and in other cases back pressure. This is especially so where the vent or waste pipe is carried up in a corner between two walls. That is a question that must be given serious consideration when the building is being designed. It is much better to have a pipe standing away from walls for venting the waste pipe, especially in high buildings.

I also believe that the plumbers of the country should take up the question of water supply. I consider this about as important as the waste and vent pipe question. After all, if the fixtures are not properly supplied with water, the plumber has not done his job. It is of the utmost importance to everybody interested in the health of the American public, that more attention be given to the water supply question.

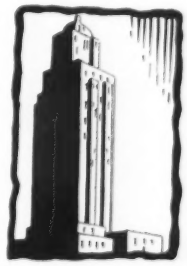
New York City. J. L. Murphy.

To the Editor

We were delighted with the reminiscent article by Mr. Jere L. Murphy, which appeared in the April 2 issue of DOMESTIC ENGINEERING. And we agree heartily with mighty near everything he said.

We were especially interested in his remarks concerning the early attempts at venting in his own New York City.

This recalls to mind an instance of venting which the writer discovered something like 35 years ago, in his own city of Hartford. At that time, the house in which this work was found was old, so the work itself must have dated pretty well back. As Mr. Murphy says, in those days back pressure and siphonage certainly had free rein in the plumbing system. In the attempt to bring air into a trap in the house to which we refer, to prevent its siphonage, a line of ⅜-in. gas pipe was connected into the crown of the trap and carried down and connected into the fresh air inlet. As a vent, this attempt violates almost every modern principle pertaining to venting. Whether the inmates actually felt that the siphoning of the lavatory trap had been overcome, we do not know.



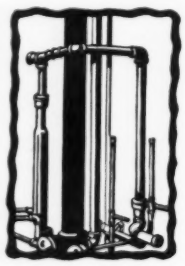
The stacks of this house ended at the top fixture. This practice was universal and in the oldest houses containing plumbing the stacks were often made of handwrought sheet lead.

We noted especially what Mr. Murphy had to say about loop vents,—that this was one of the earliest types of vent and that it was not considered a success. We were somewhat surprised at this, and wonder whether the old-time loop vent was different from the modern vent that answers to this same name. We wonder also whether in its early days this type of vent was used only in connection with elevated fixtures such as lavatories

and sinks, or with fixtures having floor outlets such as water closets and slop sinks.

We are under the impression that a practice which in those days may have resulted in failure, might today be a practical success.

Today much more attention and intelligence is directed to the proper sizing of pipes. If it is known that a pipe must act as a waste pipe and as a pipe to carry air also, it must be large enough to do this, and we think under modern requirements this necessity has been attended to.



The grading of loop-vented lines, especially for elevated fixtures, is another factor on which success or failure depends. We think that this matter is handled more intelligently now, than in the earlier days. It is possible to grade a line of waste pipe so sharply that the lower end of the line will fill with waste to such an extent that if the line is loop vented, all possibility of the line acting as a vent will be overcome.

Another point that occurs to us in connection with the loop venting of elevated fixtures is that the extensive use of hot water today can be depended upon as a much greater factor in keeping such lines clear than could have been done many years ago.

Our own opinion concerning elevated fixtures is that individual venting is generally superior to loop or circuit venting, but we are favorable to the use of loop or circuit vents on floor outlet fixtures. We do not understand that Mr. Murphy does not favor the use of these vents on batteries of these fixtures.

Nevertheless, there is great diversity of practice in the case of water closets and urinals when these fixtures are in batteries. While most cities make general use of this type of venting, there are quite a few cities which for some reason unknown to us, do not allow the use of circuit or loop vents.

Mr. Murphy favors the taking of soil and waste branches from the top of the house drain. If, however, a line of water closets entering the house drain, is to be loop-vented, the condition is different. Under such conditions, if water closets discharge in this way, the flow of air will be much less satisfactory than when the branches enter the side of the main.

Certainly few people, even those connected with the plumbing industry, realize just how much the health and comfort we enjoy in these modern times, is due to the advancement plumbing has made in the last fifty years, and again we express pleasure for the earnest manner in which Mr. Murphy has brought the fact to our attention.

Hartford, Conn. R. M. Starbuck, Jr.

My Dear Mr. Starbuck

In answer to your letter of recent date to DOMESTIC ENGINEERING, we both agree on the early systems of venting. Those men knew what was wanted and we have picked up where they left off. Naturally, the plumbers of the country have had a great deal of experience in venting in the past fifty years. It is a fact that there were no known methods fifty years ago of preventing sewer air from readily entering buildings. This was due to the fact that proper venting was not in use.

It is my contention that loop or circuit venting or any other type of venting, where the piping system is a double duty system and where it is supposed to carry water and air at the same time, is not the best system. Because, after this double duty pipe is in use for some time the diameter of the pipe decreases, and that pipe is then no longer able to take care of water and air at the same time. We all agree that the materials passing through the interior of plumbing systems adhere to the inner wall of the piping and decrease the diameter of the pipe. I believe that the continuous waste and vent system is the better system, due to the fact that the vent pipe conveys only air and no liquids are run through that vent pipe. And, the reason for this is that any liquid, but especially the liquids that run through plumbing piping, would deposit its suspended matter and decrease the diameter of that pipe. In time this would defeat the purpose for which the vent pipe was installed.

In plumbing piping systems it is sometimes as necessary to remove excessive air pressure from the system as it is to supply sufficient air pressure. This cannot be done successfully if the diameter of the vent pipe changes. It is not so serious when the diameter of the waste pipe changes in a properly vented system, because it will show up at one time or another, and can be rectified or cleared out. But, the vent defect will not show up so readily, and is liable to go on for some time before being discovered. Therefore, it is my opinion that much greater care should be taken with the vent piping system than with the waste pipe system.

A loop or circuit venting system will stand up under a laboratory test when it is first installed, but it surely will not stand up if the diameter of the pipe changes, and the diameter of the double duty pipe will change.

As to whether a loop or circuit system should be used on fixtures set on the floor or where the fixtures are elevated, I do not believe that this enters the question at all. I believe that the elevated fixture and the fixture that sits on the floor should be treated in the same manner, as far as venting is concerned.

I agree with you on the proper sizing of piping. This question should be gone into very carefully, both waste and vent piping, but I do not see how you can size piping properly for a double duty pipe if the diameter of the pipe changes after the pipe has been in use for some time. Installing a larger sized double duty pipe will only put off to another day the improper functioning of the double duty pipe. For, that large pipe will stop up about as readily as the correctly sized smaller pipe, due to the fact that the water will not flush it properly.

You refer to taking the branches from the main house drain out of the top of the drains. The reason for this is the following: When a plumbing system is not in use

(Continued on page 86)

A. A. PINSKI,
Pinski Brothers,
Great Falls,
Mont.

A Contractor Who Keeps His Workers Interested

He has created a trust fund along lines which great corporations consider sound to give the employes a "stake" in the business

I BELIEVE that any organization in order to be successful must be active and interesting. Routine performance without an outlet for ambitions, individual abilities, and interests to keep the mind active, will soon put any business into a rut that it is impossible to get out of. Believing in this theory, we are constantly trying to put it into practice.

An employe on joining our organization is first impressed with the fact that he is a vital part of this organization; that the shop interests are his interests; that he can only hope for advancement and financial gain to the degree that the business advances and prospers; and that when his particular duty is not properly discharged the whole organization suffers. He is taught that loyalty and co-operation are gateways to success. He soon understands and realizes that by helping and working in harmony with the other employes and executives he is making of his daily tasks a pleasant and interesting occupation instead of a drudgery.

We keep constantly impressing the workman with the fact that the execution of his job with the tools is considered only half his duties, that using his brains, good judgment and understanding of human nature are of equal importance. A job well done, that is not appreciated by the customer, is condemned as a poor job. We believe that it is an excellent policy for a workman to talk over every job with his foreman or employer, but to ask the boss to do his thinking for him is simply out of the question. His initiative and imagination should be developed. It is surprising the excellent results that can be derived from this source.

Perfection can only be attained by constant practice. Employes must keep in touch with developments and changes in the industries. Desires and requirements of the customer should always be their chief consideration. These matters should be talked over collectively from time to time. Ideas on merchandising, installation and general appearances are frequently exchanged.

Our employes do not believe in the old saying that, "The customer is always right." We take it for granted that he is generally wrong. Therefore, we are constantly on guard and are in a better position to forestall any trouble or dissatisfaction that may arise. Teach the employes self-confidence. They are daily practicing their calling, and it is ridiculous to assume that someone who gives their business an occasional thought should know as much or more than they do about their particular job.

Every master knows from experience that practically every customer's knowledge of his affairs is so limited that when they take time to check over a simple repair job of an hour's time and a few small items of merchandise, they are invariably wrong. Employes are given to understand they are right until proven wrong. Knowing this, they are bound to use every consideration and effort to be right, as a confidence of this nature, under such conditions, betrayed or disregarded is gen-

erally disastrous to the employe as well as the employer. Employes in filling out time sheets and job reports (which we combine on one sheet) never should assume anything. At this time the reports and charges must be exact and correct in every detail. Sheets not properly made out are turned back to the shop and no credit for time is given until they are turned into the office complete in every detail. In this way we know exactly the condition of every job. It gives us a check on the customer's requirements, and a ready reference at any time.

We find that practically every man thrives on responsibility, knowing that they are responsible not only for the practical workmanship, but also for their thoughts, words, and deeds that have a relation to the job, in any and every manner, sharpen their wits, and the job as a rule is satisfactory to all concerned.

Salesmanship is considered a valuable asset, and it is not unusual for our men to sell an expensive job, without consulting the boss. With the proper training, we find that they seldom make a mistake.

To carry a pair of dirty overalls or a three-day beard into someone's home is considered a crime against respect and decency. Service and consideration is the constant watchword. To try to please and get along as far as possible is everyone's duty, but, if it becomes necessary as a last resort to combat insult and unreasonableness, we ask that our employes act like men and stand up for their rights in no uncertain terms.

Everyone is taught to realize that general character and conduct after working hours has just as much reflection on the organization as it has during working hours.

HOW WE GAIN PERMANENT CUSTOMERS

To gain favor by criticising other shops or workmen is not tolerated. It must be understood that the only way to foster lasting good will and permanent customers is to do it on our own merits, and whenever possible to help iron out the troubles of other shops. With such practices and the forming of the organization with the right type of men, we operate with the best of harmony.

The men help each other. Apprentices turn out excellent mechanics, with a splendid all around education. There is no discontent. Everyone has the interests of the business at heart. An employe that is capable of staying with us for any length of time considers himself a permanent fixture and has no desire to move. We are quite frequently complimented on the fine type of men we have. Our customers after becoming acquainted with the operation of our organization consider the boss to a large degree as a figurehead, and are not calling for his services every time they want something done, which is a great satisfaction to the man responsible for the job, and gives the boss time to give his attention to matters that will keep things moving, instead of spending a good part of his time in running around and checking up jobs in operation every few hours or several times during the day.

To carry on and balance an organization, the employer must lay the proper foundation to get the right co-operation. We try to co-operate with the men in every way possible. Take them into our confidence, acquaint them with the operation of the business, furnish them with costs and selling prices and show them where the profits and losses are.

CONSTRUCTING A BALANCED ORGANIZATION

In fact, we believe that the employes should be instructed to have a good working knowledge of the plumbing and heating business, salesmanship and the understanding of human nature. Reward them for their individual accomplishments and give them a commission for their sales. As a rule most workmen are rather timid in assuming responsibility. Teach them that the only men that don't make mistakes are the dead men. We don't make much fuss over mistakes, but do raise the roof over lack of initiative and the fear of responsibility.

We find it is a poor policy and poor practice to let a man know that we have lost money on a job that he has worked on. It is too hard on the individual, is discouraging, and kills the incentive to put his best efforts into his work. On the other hand, it is a wise plan to let a man know that a job has turned out well. Then he feels that his efforts have not been wasted, takes pride in knowing that his efforts were instrumental in turning out a profitable job. The old saying that "Everybody loves a winner" applies as well to yourself, your home and your business, as well as it does to the race track.

Employes should realize that the boss is only a cog in the wheel, the same as they are; that any one man's accomplishments are very limited; that a good running organization can turn out maximum results with the least effort and friction.

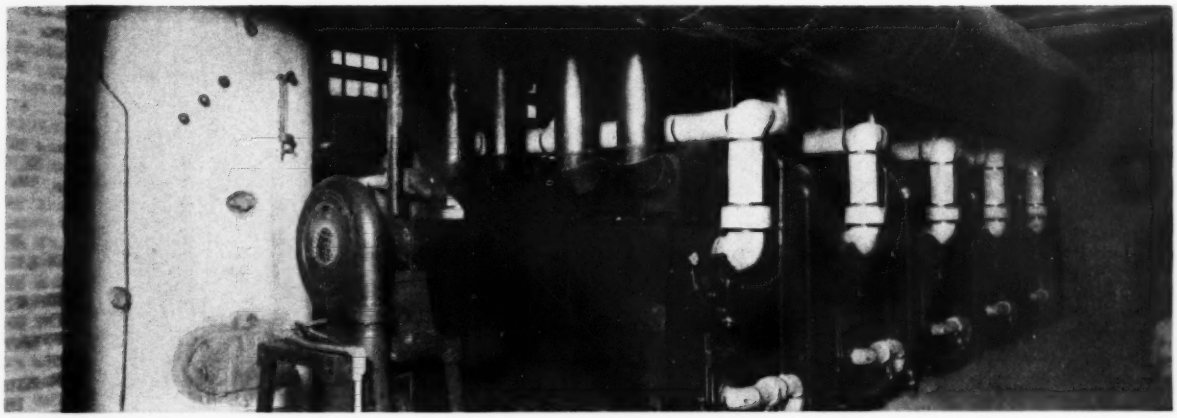
HOW WE SOLVE OUR PROBLEMS

We find that our problems and troubles are more readily overcome by talking them over with the men. Many years as a journeyman has proven to me that the only time the average man will take advantage of his employer is where he is forced to it through the actions of the employer. It is wise to encourage the men to show the boss his mistakes, as one of the big handicaps the average employer has is that he often does wrong, does not know it and has no one to call his attention to his faults.

Nothing new has been brought out in this article. These practices are as old as the hills, but I believe that quite often they are overlooked as the real foundation for any business institution.

The Employes' Trust Fund was organized primarily to give the employes an added interest in life, to help them save their money, make a good interest on their savings and bind the organization closer together. The laws of the Trust Fund

"I believe that any organization in order to be successful must be active and interesting. Routine performance without an outlet for ambitions, individual abilities and interests, to keep the mind active, will soon put any business into a rut . . . The worker's initiative and imagination should be developed."



A heating installation for a hospital which was recently finished by Pinski Brothers of Great Falls, Montana

are brief and simple and are here stated in their entirety:

"I, the undersigned, an employe of Pinski Brothers of Great Falls, Montana, do hereby subscribe Ten Dollars ($10.00) per month, or as much more as I may indicate, to Pinski Brothers Employes' Trust. I agree that Pinski Brothers may deduct from my wages the amount subscribed as aforesaid or any additional amount which I designate.

"I agree that the money of the trust may be administered by three trustees: Miss B. Hogan, A. A. Pinski, and H. Knight, advised from time to time by an advisory board consisting of T. Kline, C. Nelson, and W. Bross. In the event of the death or resignation or failure to serve of any of the trustees, the subscribers to the trust shall nominate the successor. The subscribers to the trust shall have the right to elect the advisory board and this board shall serve at the will of the subscribers. Subscribers representing a majority of the fund shall constitute a quorum for the election of trustees or members of the advisory board.

"The trust funds may be invested to finance time payments on merchandise, in first mortgages on real estate, or in bonds of public utilities, or other listed securities, all at a favorable interest bearing rate.

"There shall be no charge for services for the trustees, advisory board or secretary.

"The gross amount of the earnings shall be distributed annually among the subscribers.

HOW A SUBSCRIBER CAN WITHDRAW

"Should any subscriber wish to withdraw the amount invested, he shall make written request for withdrawal, whereupon, if the funds are available in the trust, he shall be immediately paid in full the amount of his principal and earned income. Should the amount not be available in cash, as soon as reasonably possible sufficient of the securities shall be liquidated to pay the subscriber desiring to withdraw.

"This trust may be dissolved by vote of the subscribers of two-thirds of the then amount of the trust fund, in which event the trust shall be liquidated as expeditiously as possible by the sale of all securities and assets of the trust and the division of the proceeds therefrom and the income distributed among the subscribers."

Financial statement in the tenth month of the existence of the fund is as stated:

Amount paid in in cash	$2,959.00
Amount paid for notes	4,730.90
Cash in bank and on hand	298.78
Notes bought—all monthly payment contracts	$5,169.47
Cash payments received on notes from monthly payments	1,988.82
Balance notes receivable	$3,180.65

HOW THE FUND MAKES PROFITS

From this statement you can see that money will turn over on itself quite rapidly. All notes are bought with straight 10 per cent added. There are no expenses allowed, a few dollars a year will supply all the necessary stationery, that will have to be contributed by the members out of their pocket.

There are no salaries, as the fund is conducted by the members. No employe or member is allowed to borrow money from the fund for any purpose. Only accounts for plumbing and heating are bought, properly indorsed by the seller, same as required by any finance company. This is purely a business institution and conducted as such.

During the year the boys were having some great arguments trying to figure the interest it was going to pay them at the end of the year. They think we will have to hire a Chinaman to figure this out for us.

The trust fund has taken additional notes amounting to $351.00 at the end of its fiscal year. A 10% dividend was declared and 10% left in reserve at this time. Monthly subscriptions were temporarily discontinued as business is considerably below normal and it is the intention of the fund to keep its money turning over and not as a bank balance.

It appears to me that this little game has got poker run clean off the map, and if there is any healthier and more interesting game that we could get we would be glad to try it.

Present Methods of Distribution Are Economical

Says RUPERT J. WEBER

"THE Wholesaler is a necessary part of the distributing machinery.

"Compromise settlements either by manufacturers or wholesalers are an injustice to the honest contractor.

"Every wholesaler should support the Plumbing and Heating Industries Bureau."

These are a few of the highlights from a comprehensive address on "Some Problems of the Plumbing Industry and the Way Out," delivered by Rupert J. Weber, president of the Jacob G. Weber Co., and a past president of the Chicago Plumbing Contractors Association, and a member of the board of directors of the National Association of Master Plumbers, at the 37th annual convention of the Indiana Master Plumbers Association at Muncie, Ind.

Speaking from the basis of his 26 years of experience in the plumbing business and as the head of the contracting firm founded by his father 51 years ago, Mr. Weber told his audience that "somebody has to do what the wholesaler is doing now, that is, take the products of the various manufacturers, assemble, stock and distribute them.

"A contractor could do this or a manufacturer could do it, but, if either contractor or manufacturer carried the wholesaler's stock, they would immediately find themselves saddled with the wholesaler's overhead and nobody would be any better off than he is at the present time.

"I have given much thought to the problem of how plumbing materials can reach the public in the most convenient and economical manner, but I can see no substitute for the present system of distribution," Mr. Weber said.

LOOSE CREDITS AID INCOMPETENT

In discussing the credit structure of the industry, Mr. Weber declared that the contractor is as much interested in having the manufacturer strict in his credit relations with the wholesaler as he is interested in the credit relations of the wholesaler with his contractor customers.

"If the wholesaler gets long term credits from the manufacturer, he is in a position to extend long term credit to the contractor and this has the effect of keeping the incompetent man in business," Mr. Weber asserted.

"If the wholesaler is made to pay his bills promptly, he can't run wild on credit extensions to his customers."

Mr. Weber condemned compromise settlements as a great injustice. "No man should be permitted to settle for 20 cents on the dollar and then be allowed to continue in business. The wholesaler's or manufacturer's loss is spread over his other accounts and the effect is to raise the price of plumbing materials for the consumer which is the very thing we wish to prevent.

Following a discussion of the various bills before Congress affecting the plumbing industry, Mr. Weber declared that state and federal expenditures must be severely curtailed before people will begin to spend money for new construction.

"Taxes are too high and we have too much government in business while what we need is more business in our government," Mr. Weber declared.

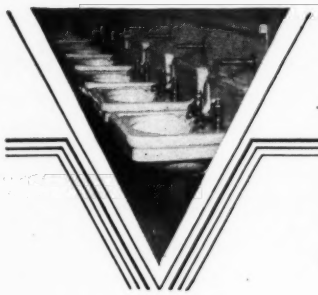
A CASE OF WASTE

The speaker cited as an instance of the waste of taxpayer's money the articles and booklets on plumbing which the Department of Commerce is writing and sending out, some of which tell the home-owner how to do his own plumbing repairs and virtually have the effect of telling the home-owner not to call a plumber if he can possibly avoid doing so.

"Much of the material in the Department of Commerce press releases is inaccurate. The statistical service of the Department of Commerce is of value to the plumbing industry, but we don't want them to be sending out articles to newspapers telling people how to do their own plumbing.

"The plumbing industry is in a better position to give the public sound and worth while information on plumbthan anybody in the Department of Commerce. We are doing this now through the Plumbing and Heating Industries Bureau which is doing a fine publicity job for the industry.

"Publicity is only one of the many valuable services of the Bureau. Every contractor who is a member of the National Association of Master Plumbers is doing his part toward the support of the Bureau but many manufacturers and nearly all wholesalers are shirking their responsibility."



ANSWERED

QUESTIONS FROM OUR READERS AND ANSWERS BY OUR ENGINEERS

About Pumping Water Into a Pool

TO THE EDITOR:

What pump would you recommend for filling a pool containing 125,000 gallons of water, which water must be pumped from a brook about 60 ft. lower than the pool and about 700 ft. distant? It is intended to use 3-in. galvanized pipe and it is desired to fill the pool in a period between ten and twelve hours. There is an electric supply available at the pit near which the pump will be located and, probably, there is some pump with a motor attached which would serve the purpose. Any suggestions which you can make in regard to such an installation will be appreciated.

New York. A. S. T.

TO THE READER:

Our correspondent states that he wants to pump water from a source about 700 ft. distant to a pool which is about 60 ft. higher (see Fig. 1); also that he intends to use 3-in. galvanized pipe and wants to fill the pool in ten to twelve hours. The first thing to determine is the head which will be developed and which the pump will

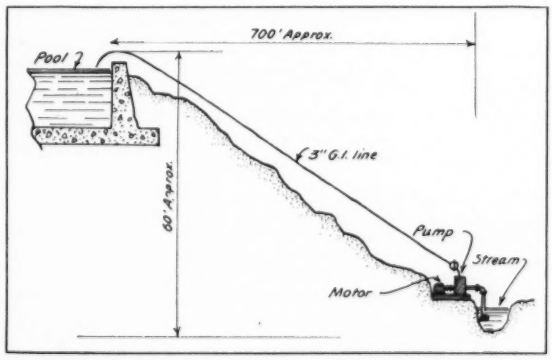


Fig. 1

overcome. With no information as to the number of bends and fittings in the line the arbitrary allowance of 200 ft. additional will be made for these items and for the additional vertical rise. Every 3-in., 90-deg. ell will add a length to the equivalent to about 15 ft. of straight pipe so if the line is a reasonably straight run the allowance of 200 ft. additional should be ample.

The quantity of water to flow through the line will be

125,000/(12 × 60) or 173 plus g.p.m. for 12 hrs., and

125,000/(10 × 60) or 208 plus g.p.m. for 10 hrs.

Standard friction tables show that the friction loss per 100 ft. of equivalent run on 3-in. pipe to be 14 lb. for 175 g.p.m., and 17.8 lb. for 200 g.p.m. Multiplying these by 9 because there is 900 ft. of equivalent run in the case cited by our correspondent gives

14 lb. × 9 or 126 lb., for a 12 hr. filling and

17.8 lb. × 9 or 160 lb., for a 10 hr. filling.

To this friction loss must be added the vertical height to which the water must be lifted or

60 ft. × 0.43 lb. or 25.8 lb., additional

making the total head on the pump at least

126 lb. plus 25.8 lb., or 151.8 lb., for 12 hr. filling

160 lb. plus 25.8 lb., or 185.8 lb., for a 10 hr. filling.

This indicates that an unusually high power bill will result and that a 4-in. pipe should be substituted in order to obtain a lesser load on the pump. Substituting this size, the friction per 100 ft. of equivalent run is found to be 3.44 lb. for 175 g.p.m., and 4.40 lb. for 200 g.p.m. so that the total friction loss with 4-in. pipe will be

3.44 lb. × 9 or 30.96 lb., for a 12-hr. filling and

4.40 lb. × 9 or 39.60 lb., for a 10-hr. filling,

which, added to the vertical head, gives

30.96 lb. plus 25.8 lb., or 56.76 lb., for a 12-hr. filling

39.60 lb. plus 25.8 lb., or 65.48 lb., for a 10-hr. filling.

Then, if 4-in. pipe is used, a pump supply 175 g.p.m. against a head of about 60 lb. would be adequate for a 12-hour filling and a pump supplying about 210 g.p.m. against a head of about 70 lb., would be required to fill the pool in about 10 hours. Both these figures are approximate and should be checked with the actual pipe line to be installed for equivalent length, and actual friction that will be developed in the pipe as installed. Of course the 3-in. pipe can be used but the head on the pump will be increased to the figures shown in the first calculations and it would not be considered an installation that would give good operating economy.

As far as the type of pump is concerned probably a direct-connected centrifugal pump would be the best type to install, as this design of pump has no interior valves with which sand could make trouble, is cheap and requires only a small foundation. A single stage pump would be all that is necessary, although some pump manufacturers might recommend a two-stage pump and there is no objection to this beyond extra cost.

The horsepower of the motor may be obtained by using the formula for water horsepower and then dividing by the pump efficiency which ought to be between

60 and 65 per cent. Probably a 10 h.p. motor would be used in the first case and a 15 h.p. motor in the second.

How to Figure Radiation for a Greenhouse

TO THE EDITOR:

Will you kindly send me a rough idea of how to figure the radiation for a greenhouse 133 ft. long by 28 ft. wide with two doors, one on each end? The glass will be double thick and the temperature desired in zero weather will be 65 to 70 deg. Fahr.; the roof will have a 6½-in. pitch and the glass surface will be about 6,000 sq. ft. What heating system would you recommend?

Massachusetts. J. W. M.

TO THE READER:

Although steam is sometimes used for greenhouse work we believe that hot water is the most satisfactory in the long run. A hot water supply is then taken from the top of the boiler and carried up to a point just below the peak of the greenhouse roof with a small expansion tank just above this to vent the entire system. Of course the tank-in-the-basement may be used if desired. From this overhead main drops are carried down to coils located under the tables and these coils are run all around the outside walls with returns carried back close to the floor until they can drop down into the boiler room. A typical layout of the usual method employed is given in Fig. 1.

Our correspondent states that there is about 6,000 sq. ft. of glass surface involved but to that must be added the wall surface, if any. Ordinarily there is a low wall around the outside coming up about to the level of the tables or around 4 ft. high. If this is true in his case, this wall should be calculated, divided by 4 to reduce it to equivalent glass area, and the result added to the glass. This would amount to

133×2 plus 28×2 or 322 sq. ft.,

and at 4 ft. high the area would be

322×4 or 1288 sq. ft., which reduced to equivalent glass is

1288/4 or 322 sq. ft. of glass.

Therefore the total equivalent glass area will be about 6,322 sq. ft.

Now each sq. ft. of glass loses 1.1 Btu for each degree of temperature difference between the inside and the outside, so the glass loss would be

$6{,}322 \times 1.1$ Btu $\times$ (70F — 0F)

or

$6{,}322 \times 1.1 \times 70$ or 486,794 Btu

and with an efficiency of about 175 Btu per sq. ft. of pipe surface for hot water the amount of pipe surface required will be

486,794/175 or 2,781 + sq. ft.

To this must be added an allowance for exposure or an average of about 15 per cent making

$2{,}781 \times 1.15$ or 3,198 sq. ft. for walls and glass.

Owing to the leakage in greenhouses being rather high it probably would be wise to use two air changes and in order to calculate this it will be necessary to know the cross-sectional area of the building. If the wall at the side is 4 ft. high and there is 4 ft. of glass above this, the height of the building at the eaves will be about 8 ft. With a 6½-in. slope in the roof the height at the peak will be about 7 ft. more. Then the cross section of the building will have an area of

28×8 plus $28 \times 7/2$ or

224 sq. ft. plus 98 sq. ft. or 322 sq. ft.

so that the cubic contents will be

322 sq. ft. $\times$ 133 ft. or 42,826 cu. ft.

and two air changes per hr. will mean

$42{,}826 \times 2$ or 85,652 cu. ft.

and, as 1 Btu will raise 50 cu. ft., 1 deg. Fahr. when the incoming air is at zero the number of Btu required to heat this amount of air every hour will be

85,652/50 or 1,713 Btu for 1 deg. Fahr., and

$1{,}713 \times 70$ or 119,910 Btu for 70 deg. Fahr.,

and this divided by the efficiency of one sq. ft. of pipe surface or 175 Btu gives

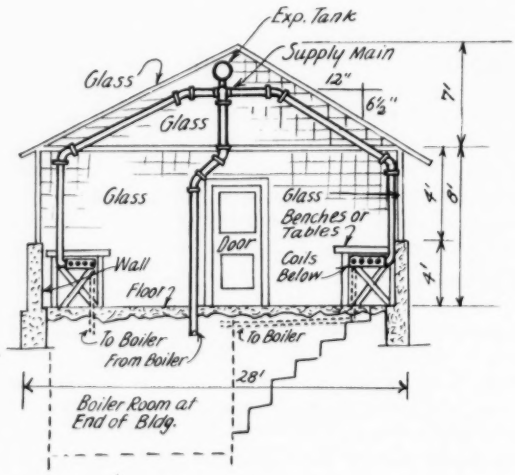


Fig. 1

119,910 Btu/175 or 685 sq. ft. of surface additional. The sum of both the wall and glass loss and the air change loss gives in sq. ft. of pipe surface required

Wall and Glass	3,198 sq. ft.
Leakage	685 sq. ft.
	3,883 sq. ft.

The boiler should be sized on a combustion rate of about 6 lb. of coal per sq. ft. of grate per hr., and on the assumption that about 8,000 Btu will be transmitted into the water from each pound of coal burned. Then the total Btu supplied will be

$3{,}883 \times 175$ Btu or 679,525 Btu

and this divided by 8,000 Btu received from each pound of coal shows that

679,525 Btu/8,000 Btu or 85 lb. of coal must be burned per hour on a zero day.

85 lb. of coal/6 lb. per sq. ft. gives 14 plus or the sq. ft. of grate area required in the boiler.

It should be pointed out that no allowance is made for piping in the above as all mains are uncovered and all radiated heat goes into the house.

Can You Answer These Questions?

A Question and Its Answer

The following question was asked in the issue of April 30, and the following answers are by readers:

Does a discount of 50 *per cent,* 10 *and* 5 *figure out to be greater than a discount of* 5—10 *and* 50?

1

THE answer to the question, appearing on page 87 of the April 30th isue of DOMESTIC ENGINEERING, is that there is no difference between chain discounts of 50—10—5 per cent and 5—10—50 per cent. The net reciprocal in each case is .4275.

The writer has figured chain discounts for a good many years and learned long ago that chain discounts carrying the same factors result in identical net discounts, irrespective of the position of the various factors.

Examples of different chain discounts and their corresponding net discounts follow:

		Off	On
55—10— 5 55— 5—10 5—10—55 10— 5—55 5—55—10 10—55— 5	=	.61525	.38475

		Off	On
60—10— 5— 5 60— 5— 5—10 10— 5—60— 5 5— 5—10—60 5—10— 5—60	=	.6751	.3249

Newark, N. J. J. F. Reber.

2

DOES a discount of 50 per cent, 10 and 5, figure out to be greater than a discount of 5, 10, and 50?

The above question reminds me of a certain wisecrack that I heard not so long ago to the effect that no matter how thin you slice it, it is still "baloney." So it is with the discounts above mentioned. No matter how you figure them, backward or forward, the same result is obtained. I used to have a hard time convincing myself that the results of such a combination of discounts could be the same. It seemed impossible that where the larger discount was taken off first, the discount would not be greater than if the combination were reversed, but such is the case.

Take for an easy example a small boiler listing at $120.00. Deduct 50 per cent which is $60.00, and you have left $60.00. Take 10 per cent of $60.00, which is $6.00, deduct this and you have left $54.00. Take 5 per cent of $54.00, which is $2.70, deduct and you have left $51.30.

Taking it the other way around, if you deduct 5 per cent of $120.00, which is $6.00, you have left $114.00. Deducting 10 per cent of $114.00, which is $11.40, you have left $102.60 and deducting 50 per cent of that remainder, which is $51.30, you have left $51.30.

What a lot of figuring it would save, if a certain commodity which will ultimately net $50.00, could be originally quoted at $50.00, but what a long lane of discounts there may be to travel before that price is eventually arrived at. Start, for example, at a water heater factory where the manufacturer allows a distributor 50 per cent from the list price on his water heaters. If a heater lists at $100.00, 50 per cent off makes it $50.00, but there may be an additional 5 per cent for carload allowance, bringing it down to $47.50, and an additional 2 per cent for cash, reducing it still further to $46.65. Then, if the distributor turns around and allows a dealer a 25 per cent commission, on the list price, or $25.00, he brings his cost back up to $71.65, and so on and so forth.

Discounts are tricky things, and unless one is accustomed to figuring them, he may be misled at times. There is the discount like this, for instance, where one is offered a discount of 80, 20, and 10 per cent, looking at first glance as though the article was being offered at a discount of more than 100 per cent and would therefore cost less than nothing. Figure it out, though, say on an article listing at $40.00. Deduct 80 per cent of $40.00, or $32.00, and you have left $8.00. Deduct 20 per cent of $8.00, or $1.60, and you have $6.40. Deduct 10 per cent of $6.40, or 64c, and the remainder is $5.76. The article, therefore, that would appear to cost less than nothing, costs $5.76.

Such misleading discounts are more often than not encountered where a manufacturer has issued an expensive catalog which he cannot afford to duplicate each time a price is changed. Instead he changes his discounts so as to net the desired quotations and often they run to great lengths.

A salesman may come in and ask you "What are you getting on valves?" 80 per cent you tell him. "Well, we'll give you 75 and 10," he says. That sounds pretty good, but when you get down to brass tacks and figure it out, you find that you are getting better than that already, so discounts really mean nothing unless you figure out the net price.

Only this morning a man came in to the office to offer me what he called a rare bargain in valves. Asked what they would cost me, he started to rattle off a string of discounts. "Just a minute, please, sir," I admonished him. "Let's get at the net cost of these valves and save your time and mine, too."

Brass pipe cannot be bought for the price of galvanized pipe, or a gas boiler for the price of a coal heater, no matter how much larger or more promising the discounts may appear. Figures do not lie, so watch your figures.

Kentucky. B. M. B.

How Would You Answer This Question?

What percentage of increase in heat emission would you expect to receive on a steam heating system when the radiators are standing in a room temperature of 70 deg. Fahr., if the steam pressure is increased from 2 lb. gauge to 5 lb. gauge?

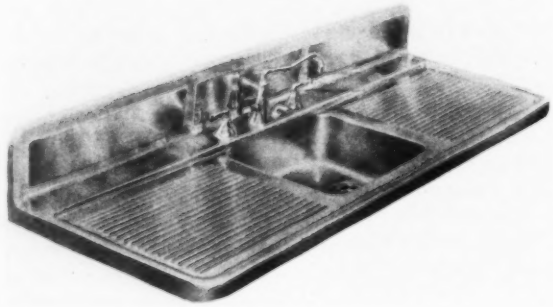
Answers based upon your experience, and suitable, will be paid for and published in the July issue.

ITEMS FOR STORE, SHOP AND JOB

Since the first of the year we have published in these columns a total of fifty-nine selected items which just recently have been placed on the market. All of these have been featured with the idea in mind of assisting the contractor to improve his business through his use of them as new and more effective sales weapons. Take stock of your activities since January 1. Have you used them? Here are more for store, shop and job.

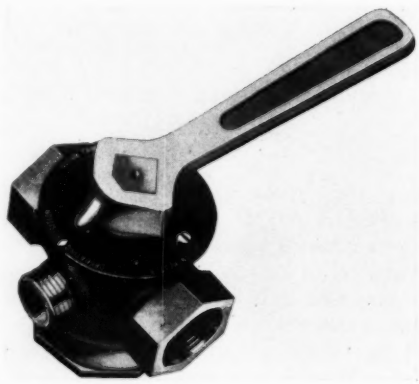
A Stainless Steel Sink Introduced

An announcement has just been made of a stainless steel sink for kitchens. It is seamless and its acid resisting qualities make it uneffected by fruit juices or other acids usually found in the kitchen. It is stated that a damp cloth is all that is needed to keep the surface in condition. The reverse side of the metal is treated with a special sound deadening compound to prevent any hollow metallic sound. Also, it is said that the material has sufficient resiliency to reduce impacts and considerably lessen the chances of a dish breaking when dropped. The eight-inch basin has been designed with a removable strainer and stopper to form a dish pan. The drainboards are slightly ribbed to make them safe for top-heavy glassware. A slightly raised full-length ledge is in back of the drain boards to provide a dry space for soap, boxes of soap flakes and the like. It is equipped with a special spray which sprays into the basin in its normal position. This spray is connected to a fifty-four-inch flexible hose which disappears into the shelf. The fixtures are chromium finished and include a quick compression swing spout faucet with a swivel-valve seat. Four standard lengths are available. It is manufactured by the Domestic Products Division of The Bossert Corporation, Utica, N. Y.



Valve for Washing Water Heating System

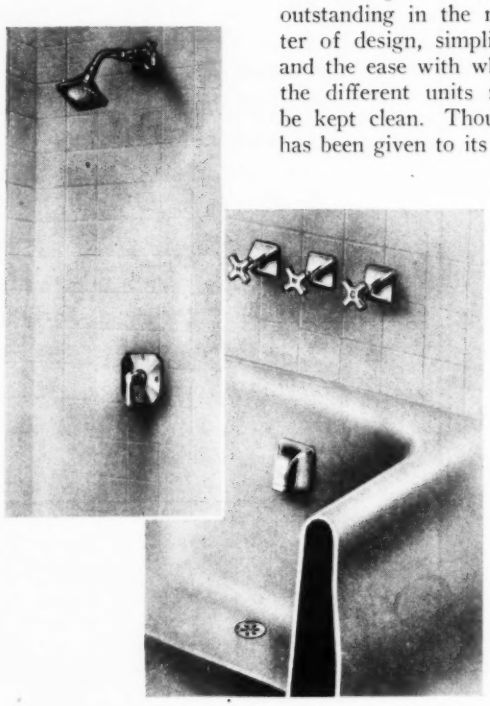
The valve illustrated in the accompanying view has been designed for use in washing out domestic water heating systems. The idea in back of it is to provide a means for washing out independently first one-half of the system, such as the heater and piping, and then the other half including the tank and the balance of the piping. It is designed so that when the valve is not in the operating position, water is discharged from the valve hose connection. In this way, the operator is notified of the wrong condition. The water does not stop wasting on the basement floor or through the hose to the sewer until the valve is thrown to its operating position. Markings on the valve plate indicate clearly the three valve positions and what they are for. The manufacturer is Excelso Products Corp., 65 Clyde Ave., Buffalo, N. Y.



Readers will find in this department news of our industry's progress in the manufacture of equipment. You can read of the efforts of manufacturers to develop products which will increase customer demand, will make shop methods more efficient and will simplify installation.

A Complete Line of Fittings Introduced

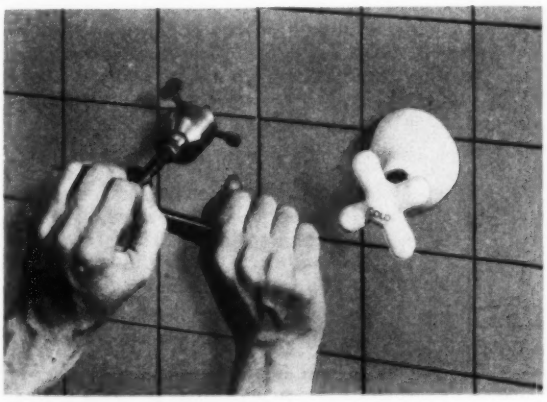
The accompanying two views illustrate a part of a complete line of bath, shower and lavatory fittings which has just been introduced on the market. The line has been planned to be outstanding in the matter of design, simplicity and the ease with which the different units may be kept clean. Thought has been given to its use



in both remodeling and new work. The Scovill Manufacturing Company of Waterville, Conn., is the maker.

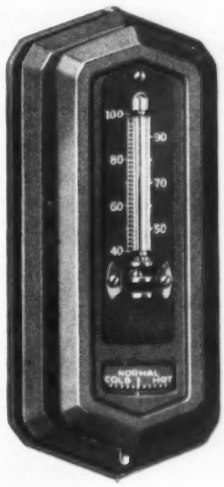
A Tool for Reseating Faucets

A tool has been designed and placed on the market for the purpose of reseating faucets. The accompanying illustration shows the device in operation. The seat is reached through the valve stem opening by removing the valve stem and the escutcheon. The tool is clamped to the body of the faucet and a tapered guide centers a tap which is used in running a thread below the worn seat. A reamer then under-cuts the old seat and a new seat, which is a part of the equipment, is screwed in place. The faucet is reassembled and the operation is complete. The manufacturer is Universal Faucet Reseater Co., 208 N. Wells St., Chicago, Ill.



A Room Thermostat and Heat Regulator Motor for Automatic Heat

A new thermostat and heat regulator motor has just been placed on the market. The thermostat has been designed, among other things, for attractiveness. It is finished in bronze with the idea that it will blend readily with the coloring and furnishings in most homes. The base is of moulded bakelite to which all of the operating parts are permanently mounted, and has been designed to permit its installation against any type of wall without danger of distortion. The thermostat is of the low voltage type, but it can be made to operate line voltage equipment by the installation of a small relay between the equipment to be controlled and the thermostat. The standard range of the device is from 55 deg. Fahr. to 85 deg. Fahr. Other ranges can be supplied for special applications. It is set at the factory to operate within a total variation of less than 2 deg. Fahr. When the indicator is set at normal, the adjustment is such that the thermostat will control the temperature at from 69 deg. Fahr. to 71 deg. Fahr. The device is designed to control oil burners, gas burners, coal stokers and coal blowers; for use with motorized valves on district steam installations, on air conditioning systems; for use in greenhouses, incubators and similar applications. Models come with and without the thermometer. The action of the thermostat has been designed for positive make and break operation for use with any equipment requiring constant power to operate, such as motor gas valves, solenoid valves and relays, or equipment requiring power to operate in each direction, such as draft regulators and three wire solenoid valves.



The heat regulator motor has been designed for the control of coal fired boilers, oil valves, hot water and steam valves, auxiliary dampers and similar applications. It contains no brushes and has been worked out so that no lubrication is necessary. The terminals are enclosed to prevent tampering, yet are accessible for wiring. All of the mechanism is mounted in a cast aluminum case. This equipment is manufactured by Automatic Products Company, 121 N. Broadway, Milwaukee, Wisc.

An Invitation To Spend the Summer

—in greater comfort. We invite you to our place of business to show you some of the things which will make life more convenient and comfortable this summer, by speeding up the efficiency with which your household tasks are done. An automatic water heater, a convenient set of laundry trays,—either of these will do great service in making sure of your greater comfort. And life without shower equipment for the summer seems unthinkable. There are other things here you'll want to see in preparing for summer comfort.

(In this space Your Name, etc.)

A two-column newspaper plumbing ad

Dear Madam:

Summer without shower equipment in the home would seem too uncomfortable to think about where one has enjoyed that comfort.

For yourself, when the household tasks are completed; for the head of the house at the end of a hot day in the office; for the children's bed-time bath--a few minutes under a shower and a refreshing, thoroughly cleansing bath has been completed.

I need not point out how convenient that would be in the morning when two or three members of the family want to bathe before setting out for office or school.

The interesting point about modern shower equipment is that it may either be added to your present bathtub, or, if you desire, the shower may be placed in a cabinet of its own. The chromium which is used in the shower equipment will make a sparkling addition to any bathroom.

You would, I am sure, be interested in looking over the various types now available. I'd be very glad to have you telephone to say when you are coming in, and I will make it a point to be here.

Just now, as you know, is an advantageous time to add such conveniences to your home. Prices, both of equipment and of labor, are at lower levels than they have been for years. You can secure such plumbing comforts at a great saving over what you would have paid several years ago.

I shall be very glad to welcome you here and to give you any information that will assist you in making the plumbing in your home more comfortable and convenient.

Very truly yours,
HARRY BROWN

A plumbing sales letter

The copy on these two pages is for the use of readers of DOMESTIC ENGINEERING —without charge. If you wish to use the illustrations, they are sold at $4.20 for twelve —six months' service.

If you are using any of this copy, send us samples. We like to keep in touch with what our readers are doing.

Will You Have Leisure This Summer

MANY women seem to have a trick of efficiency in handling household tasks—whether they have help, or do those tasks themselves. Most often you will find that a high degree of efficiency is based on equipment. For the summer months, adequate, convenient plumbing arrangements will do much to assure leisure time. Proper water-heating equipment, convenient laundry arrangements, the modern kitchen sink, of the right height and easily cleaned—each piece of modern plumbing does something to speed up the household tasks. You will appreciate how true this is after a visit to our showroom.

(In this space Your Name, etc.)

A one-column plumbing ad

SERVICE

Plan Winter Economy—NOW

ECONOMY is the watchword today—and it is quite possible that a check-up on your heating plant will indicate that there is a substantial fuel saving possible for next winter. Various things will contribute to over-consumption of fuel without added, or even adequate, winter comfort in your home. Now is the time to make that check-up. We will send a competent man to go over your boiler and radiators and to report what can be done to increase their efficiency. Just telephone. Prices are lower now than they have been for years.

(In this space Your Name, Etc.)

A single-column heating ad

SPEND FOR THE HOME IS GOOD ADVICE

"The thought of spending for the home this year," says Harry Brown, local plumbing and heating contractor, "which I have been seeing in a number of places, is mighty sound advice.

"Prices are so low that such spending as is done for the home now will certainly add value out of proportion to present small costs. Besides, whatever a man's difficulties may be, if he has a comfortable home, kept up to date, he's always got a reserve of hope and encouragement on which to draw. Spend for the home—it's the soundest piece of advice to be had today."

Hand this publicity item to your newspaper

My dear Sir:

As you check over your expenses for this year, you will be figuring on fuel costs for next winter. No doubt you will take your fuel cost of last winter as the basis for your figures.

Are you sure that last winter's cost of heating is a fair one--I mean to you? Heating plants, like all other mechanical equipment, have a way of growing old, and as they grow old they lose efficiency. They require more time and attention, and they require more fuel in order to give you the comfortable conditions you desire for your home.

We have always urged owners of heating plants to have an inspection made at this time of year. The heating plant is to lie idle for the summer months. What is now a minor defect may turn out to be a major one the first time heat is demanded of the plant at the end of the year. Not to mention the fact that such defects almost invariably contribute to a high heating cost.

In line with our custom we are suggesting a heating plant inspection now. It will give you the assurance that your plant will be ready for service at a moment's notice. Further than that, you will be assured of a proper heating cost for next winter.

Telephone us at your convenience. We'll be glad to have a man at your home at any time you say. He will be thoroughly competent to check the heating plant and to recommend such adjustments as may be necessary.

As you know, prices are lower than they have been for years. That is why we suggest prompt action because, of course, such low prices can not continue to hold true indefinitely.

Very truly yours, HARRY BROWN

A heating sales letter

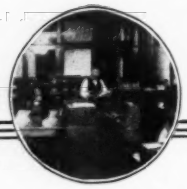
Have You Forgotten Last Winter's Fuel Bills?

Many people are still grumbling about what it cost them to heat their homes last winter. Now that the heating plant is out of service for the summer you have an opportunity to look into the savings in fuel cost which may be possible. Some form of automatic heat—whatever fuel you burn—or perhaps an adjustment of the plant or the addition of a few accessories—any one of these, at a relatively small cost, will help cut down fuel costs that are too high. Just telephone. We'll send a competent man to check over your heating plant.

(In this space Your Name, Etc.)

A two-column newspaper heating ad

OUR INDUSTRY



Write Your Congressmen

INCREASING strength has been shown in the past few weeks in the movement to separate the mechanical contracts from the general contract. Under the leadership of representatives of the heating and piping, electrical and plumbing industries, the movement has resulted in the introduction of such bills in both the house of representatives and the senate. Committee hearings have been held.

These bills unless reported from committee will not be acted on one way or another at this session of congress. In the last minute legislative jam, such bills are frequently sidetracked, so that the present request of those backing this drive is to rally enough interest among contractors that letters, telegrams and personal talks will convince congressmen that such bills are important and should be voted upon right now at this session.

A Chicago contractor a few days ago summarized the feeling as between general and subcontractors in the historic phrase "millions for defense but not one cent for tribute." It reflects the feeling that the so-called "chiseling" of the subcontracts should be ended and mechanical contracts established as a business relationship between the men who know heating or plumbing and the owner.

A Shop or A Store

FOR many years, one contractor told us the other day, he has trained himself to talk of his 'store' not his 'shop.' Of course, it is natural for him now to think and talk of his place of business as his store. Many others, like this successful contractor, also think and talk of the 'store.'

The suggestion is worth using. Some of the other men in the group felt as we did that store is by all means the stronger word.

The change in phraseology is not artificial. The plumbing and heating distributor of today, except those who confine their activities entirely to contract work on large installations, is thinking more of the selling phase of his business. He is endeavoring to use his place of business as a promotional factor, whether he is actually selling goods there or is merely using it to attract and impress his customers. And for that reason, it has become his store rather than his shop.

The shop end of the establishment is of principal interest to the owner of the business. The store end is what the customer sees and remembers. So let's all call it a plumbing store. It'll help.

Domestic Air Conditioning

DOMESTIC air conditioning came in for a lot of attention at the convention last week of the heating and piping contractors. It is worth knowing that not only the contractors were interested, and the consulting engineers, but both outside speakers were enthusiastic over the developing possibilities in air conditioning.

Assuredly, the heating engineer and contractor with his fundamental strength as a man who knows how to install good mechanical equipment, has the front rank position as the logical distributor for domestic air conditioning products. His most serious handicap is the feeling that many manufacturers hold, especially those from outside the industry, that he is not a salesman. But other heating products have been promoted as selling devices rather than mechanical plants with devastating effects on the manufacturers.

Better trained as they are today in selling and better informed on the technical side of their business, our heating and piping readers have the opportunity to show interest and leadership in the development of this new field.

Display Your License

WHERE do you keep your license? We know where many of them are. Some are in the plumbing contractor's desk. A good many more are in an envelope tucked away in the vault.

But where do you find the licenses of other professional and business men. Usually, the lawyer has his diploma or license framed prominently on the wall of his office. It gives the visitor or customer a feeling of confidence and reliability in the attorney to see this imposing evidence that the man across the table knows everything about the law.

Why not bring out your own license and display it? If put in the window of your place of business, many would read it and learn for the first time that plumbing is a specialized business which requires a long apprenticeship and ends in an examination.

Let's bring the licenses out into the open and display them.

R. D. Williams, newly elected national president

Heating Contractors Show Interest in Air Conditioning

DOMESTIC air conditioning is taking on a definite meaning to the heating and piping contractor. The engineering and merchandising problems which it is bringing up were covered in reports and addresses at the 43rd annual convention of the Heating and Piping Contractors National Association at Detroit, May 16-18. The interest in this new development was reflected in the active discussion by the delegates.

The convention was marked also by the presentation during the 3-day meeting of complete reports on the various activities of the association which include engineering standards, welding practice, merchandising, education, business survey and legislation. The reports reflected the efforts of the officers and committees in adapting the work of the association to the needs of its members today.

In addition to the preparatory work by the officers, the convention was aided by the efforts of the local Detroit committees in both arranging for handling the business sessions and the entertainment features. While the attendance was comparatively small, the meeting can properly be rated as a successful one because of the interest and pleasure taken by the visiting delegates and guests in the convention's meetings and social features.

R. L. Spitzley, retiring national president

J. Lawrence DeNeille, new vice president

John H. Zink, newly elected treasurer

Walter Klie, chairman, trade promotion committee

Harry M. Hart (left), chairman, boiler output sub-committee, and Herbert A. Snow (right), retiring director

R. A. Wolff, chairman of the standards committee

Ray L. Spitzley of Detroit retired as president of the association. He is succeeded by Robert D. Williams of New York, who has previously served as treasurer and last year as vice president. J. Lawrence DeNeille of St. Louis, who was treasurer last year and also headed the membership committee's work, was advanced to the vice presidency. John H. Zink of Baltimore, chairman of the committee on welding, was elected treasurer.

Herbert A. Snow of Boston retired as a director. He is succeeded by Thomas O'Callaghan of Boston. Mr. Spitzley and Justin A. Kiesling of Houston, Tex., were re-elected to the board of directors.

LOCAL COMMITTEES HELP MEETING

George E. Freyn of Detroit was general convention chairman and working with him were the various committees which prepared for the smooth running of the meeting. Those associated with Mr. Freyn were Emery E. Harris on entertainment; Clarence A. Davis on finance; Edward Glanz on golf; L. L. McConachie on hotel and transportation; Charles A. Gallarno on publicity; Harry O. Nelson on manufacturers and jobbers; Emmet Byrnes on reception. Ladies in charge of the varied activities were Mrs. A. C. Wallich, Mrs. James Degan, Mrs. William Brown, Mrs. William Boales, Mrs. Charles Gallarno, Mrs. John H. McCann, Mrs. R. Frank Connell and Mrs. Ray L. Spitzley.

Convention committees included: Credentials—Frank A. Merrill, Massachusetts, chairman; Joseph H. Volk, Wisconsin; J. J. Sneider, Pennsylvania. Nominating—William J. Olvany, New York; Thomas O'Callaghan, Massachusetts; Howard E. Crook, Maryland; W. M. Smith, Missouri; George Freyn, Michigan. Resolutions—Harry M. Hart, Illinois, chairman; L. Walter Moon, Missouri; E. A. Dusossoit, Massachusetts; Emery Harris, Michigan; George Nachman, Ohio.

The subject of air conditioning was covered at length in an interesting address by Walter L. Fleisher, consulting engineer, New York. In opening his address, Mr. Fleisher declared that the heating contractor no longer has the option of incorporating air conditioning into his work, but that he is confronted today with the necessity of doing so.

In discussing air conditioning equipment, Mr. Fleisher said, "The manufacturer is recognizing this fact and the manufacturers who have been providing the heating contractor with material are attempting to adapt their present manufacturing facilities to the development of air conditioning apparatus to sell to the heating contractor. This new and seemingly profitable field is bringing into the market so many inefficient and improper devices that it is essential for the heating contractor to learn the fundamentals of air conditioning so that he can cope with the situation as it now exists and as it will continue to develop."

Continuing his discussion of the responsibilities of the heating contractor in this new development, he said, "In order to do this he must learn the new concepts of comfort and the basic principles involved in this creation of comfort. In order to do this he must know something about air and vapor and the change from water to vapor and from vapor back to water, and a simple method must be developed based, however, on theoretical foundations. He must learn the effect of heat and moisture in the production and maintenance of health and comfort to aid him in the sale of this new product. He must also learn something about cooling for summer, an entirely new subject, but one that is being coordinated with heating and humidifying for winter and one that is being pushed by the refrigerating contractors.

"He must learn the differences between furnace systems of air conditioning and steam and hot water systems so that he can compete with the furnace manufacturer or make up his mind as to whether he wants to add that branch of heating to his own output.

"In order to handle both the humidifying and cooling

requirements, he must be able to roughly calculate what these may be and what they add to the cost not only of the installation but of the operation. He must be familiar with the various types of refrigerating devices and other cooling means so that he can discuss with some familiarity the relative merits of mechanical refrigeration, cold water refrigeration or steam-developed refrigeration, so that he may be in a position not only to differentiate between good and bad apparatus but so that he can discuss with a certain amount of assurance the relative merits with prospective customers."

In closing his address he declared, "As comfort is the slogan of the heating, ventilating and refrigerating manufacturer today, the heating-piping contractor should become a comfort contractor, for by so doing he can embrace in one work all of the things that he is trying to accomplish or sell for all seasons of the year."

In submitting the report of the committee on standards, Richard A. Wolff, chairman, reported that his committee is at the present time developing engineering standards in this new field for the membership of the association.

The two speakers from outside the heating and piping industry, Col. James L. Walsh, vice president of the Guardian Detroit Union Group of banks, and William S. Power of the Campbell-Ewald Co., Detroit, both referred to their belief that domestic air conditioning offered splendid possibilities for development as an important industry.

Louis T. Braun, secretary of the Chicago Master Steam Fitters' Association, talked on the timely subject of "Keeping Abreast of the Times."

Mr. Braun spoke of several major changes that are now taking place in the heating, ventilating and air conditioning fields. He pointed out to his hearers that refrigeration and heating have now merged and even overlap, that they can no longer be separated and that the heating contractor must now be prepared to handle refrigeration as well as heating. "There is little difference between the two," said Mr. Braun. "One is a process of extracting heat and the other a process of adding heat to the air."

Mr. Braun pointed out that there are 16,000,000 homes in the United States that are wired for electricity but have no electrical refrigeration and that in these times when new building activity is down this is a very large potential field for the heating contractor. He stressed the necessity of the heating contractor keeping abreast with the times by being informed on new equipment for domestic air conditioning.

The annual report of President Ray L. Spitzley directed attention to the work of the association, its business building programs, the opportunities offered by seeking modernization work and by the awakened interest in air conditioning.

MODERNIZATION IS PROFITABLE

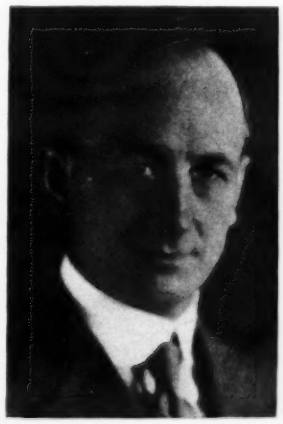
"Modernization programs carried out consistently and persistently, supplement, to an amazing degree, the lack of new building projects," said Mr. Spitzley. "Moreover, this type of work has proved not only highly profitable but opens up either new contacts with your public or continues the good will among those whom you previously have served.

"It strikes me, we are driven by necessity to carry on this modernization program and strangely, there are such potential possibilities at our very door that I wonder why we need the urge.

"Moreover, your board of directors felt that the field of heating and ventilating was being expanded and enlarged by air conditioning and that the amount of new apparatus coming on the market for this purpose and the patent systems which exist at the present time, warrant a special investigation of this subject.

"We are conscious of the fact that it would be necessary for the heating and piping contractor to do this work or else some other element in the building industry

Robert B. Miller, secretary, New York City association



Louis T. Braun (left), secretary of Chicago association, and Joseph C. Fitts (right), national secretary

S. Lewis Land, educational director, national association

Picture taken at one of the business sessions of the convention

would come in to meet the demands of the public and this would be lost to our membership.

"Air conditioning is essentially the problem of the heating engineer. Modernization means increased value of buildings, plus enhancing the value of the present equipment."

Secretary Joseph C. Fitts of New York reported for national headquarters and told of the efforts made to adjust its activities to today's conditions. He also outlined the special needs and obligations of a trade association at this time. He stated that interest having shifted from production to selling, the member's obligation was to make liberal use of the various services directed toward business promotion.

REPORTS ON OPERATING EXPENSES

Mr. Fitts later read the survey he had made of the heating industry, based on the actual results obtained last year by 165 members of the association. These reports showed total sales of $19,493,568.62. Sixty firms reported a profit averaging $6,809.47 and 87 showed an average loss of $5,128.68 with 18 firms reporting no profit or loss. From 140 complete reports, Mr. Fitts showed a loss of 0.21 per cent of sales. These 140 firms had an operating expense of 26.4 per cent of the cost of material and labor. The report was also divided into groups, depending on the volume of business done, showing operating expense ranging from 57.4 per cent for firms with sales under $40,000; 33.6 per cent on sales from $40,000 to $80,000; 29.0 per cent on sales from $80,000 to $150,000; 24.3 per cent on sales from $150,000 to $300,000 and 21.07 per cent on sales of more than $300,000.

S. Lewis Land, director of the educational department, outlined its work which includes standards, welding, trade promotion, editorial and research. The merchandising activities have been particularly pushed during the past year with the object of securing through modernization sales an offset to the drop in new contract work. Mr. Land outlined details of the selling program as well as sketched the other services which his department had been called upon to give during the year.

Walter Klie of Cleveland reported also on the trade promotional work done under the auspices of the committee of which he is chairman. Both the framework of the plan and the actual results reported by members were included in Mr. Klie's report. This showed more than $2,000,000 in business secured during the year 1931 and the first four and one-half months of 1932.

Interest was taken in the work being done by the association in conjunction with the master plumbers and the electrical contractors in attempting to secure national legislation calling for the separation of heating, ventilating, plumbing and electrical contracts from the general contract. The activity had been pushed during the year by a special committee on separation of contracts headed by Vice President Robert D. Williams.

An important resolution adopted follows:

"WHEREAS, Many new types and design of radiation and convectors have been introduced in the heating industry; and

"WHEREAS, There appears to be no standard for testing and rating these new units, which has resulted in considerable confusion, controversy and loss to the industry because of this lack of standards, therefore, be it

"RESOLVED, That this Association, through its Committee on Standards or such other committee as the Board of Directors may designate, take such steps as may be deemed necessary to remedy the difficulties through the establishment of definite standards for testing and method of rating these units."

Brief talks were given by A. R. Herske of the American Radiator and Standard Sanitary Corporation; R. G. Creviston of the Crane Co.; J. F. McIntire of the United States Radiator Corp.; and Glenn P. Seeley, former president of the Michigan Association of Plumbing and Heating Dealers.

A paper was presented by Robert B. Miller, secretary of the New York City association, on "Prequalification of Bidders" and one by Harry Geiser, secretary of the North Jersey association, on "Organizing a Pipe Welding Training Class" was read.

Richard A. Wolff of New York reported on the work of the committee on standards of which he is chairman. This committee has been active in studying various standards and has now been asked to prepare data and charts on air conditioning. Harry M. Hart of Chicago reported as chairman of the sub-committee on boiler output, outlining particularly the change in net load recommendations made necessary by the increasing use of oil and gas burners. The report on certified heating was read for its chairman, C. P. Finke of Sheboygan, Wis. John H. Zink reported as chairman of the committee on welding.

Honorary membership was unanimously voted to Walter L. Fleisher and Ralph S. Franklin of Boston.

Delegates endorse National Association's legislative program. Walter C. Williams is re-elected state president. Committee appointed to study by-laws of other state associations

Walter C. Williams, Wilkes-Barre, re-elected president

Tell Utility Plans at Pennsylvania Annual Convention

THE Pennsylvania State Association of Master Plumbers held its 38th annual convention at Wilkes-Barre on May 16, 17 and 18 and re-elected Walter C. Williams, of that city, as president of the organization for another year. William Schneider of Scranton was elected vice president, and Carl J. Forve, Wilkes-Barre, was re-elected secretary-treasurer. The following were elected to the state board of directors: Harry L. Stilwell of Philadelphia, Howard Fritz of Reading, L. R. Wickerham of Donora and Stewart Rorer of Ambler.

It was voted that a committee be appointed to study the by-laws of other state associations and to present at next year's convention suggestions for any changes in the Pennsylvania by-laws that it is felt will benefit the association. A five dollar registration fee is to be charged at future conventions in order to help defray the entertainment and other expenses.

Another resolution, that was adopted, called for the designing of a membership seal of a more permanent nature than the one now in use. The resolutions committee recommended that the secretary write to all associations that are in arrears with their per capita tax for 1931-32, and that if this is paid they should be restored to good standing. The resolutions committee also recommended that the salary of the executive secretary be reduced, and that the per capita tax be reduced from $5 to $4, which in turn will enable the state association to reduce its dues from $9 to $8.

James J. O'Rourke, president of the Wyoming Valley Association, opened the convention by welcoming the delegates and guests to the city. Harry Adams, secretary of the Wilkes-Barre chamber of commerce, voiced the official welcome of the city in the absence of the mayor. George Hicks of Philadelphia, responded, and urged that the various chamber of commerce organizations in the state co-operate with the master plumbers in their effort to secure passage of a plumbing code for the state.

President Walter C. Williams appointed the following committees to handle the convention's business:

Credentials, P. C. Lobach of Allentown, chairman, Leo Steadle, Kingston, and Norman Corrigan, Hazelton. Resolutions, Robert Pflug-Felder, Philadelphia, chairman, Howard Fritz, Reading, and James Arthur, Olyphant. Nominating, George Ethridge, Belle Vernon, chairman, Harold B. Asquith, Philadelphia and Earl Griffith, Johnstown. Auditing, William Schneider, Scranton, chairman, James Redington, Pittston, and L.

R. Wickerham, Donora. Sergeants-at-arms, Carl Schultz, Wilkes-Barre, and Edw. Spohrer, Pittston.

The following past state presidents responded to the roll call: E. D. Swoyer, Allentown, David S. Sanderson, Drexel Hill, Chris. Troutwine, York, James H. Lutz, Jr., Harrisburg, Charles K. Wills, Lancaster, Gregory Drummond, Philadelphia and George S. Bray, Wilkes-Barre. Mr. Turner spoke for the past presidents in response to remarks by President Williams.

Memorial services were held for the following association members who died during the past year: Thomas Mervine, E. H. Rinear, William White and Joseph J. Brennan, all of Philadelphia, and Harry Hammersla, Harrisburg.

The credentials committee reported a total registration of 235 persons, including delegates, ladies and men guests.

TELLS OF UTILITY CO-OPERATION

P. W. Donoghue of Boston, Mass., president of the National Association of Master Plumbers, was introduced to the convention by Maney J. Feeney, president of the Philadelphia association and a national director.

President Donoghue complimented the Pennsylvania association and its officers for the progressive work accomplished during the year. Mr. Donoghue described in detail the activities of the national association. He expressed his satisfaction with the arrangement between the N. A. M. P. and the American Gas Association in promoting co-operation between master plumbers and utility companies in the sale of gas appliances. He also described the national association's effort to secure national legislation that would be of benefit to the plumbing and heating contractor and the public, and urged the Pennsylvania association members to lend their support to the several bills that he mentioned.

The Cincinnati Survey, dealing with direct-to-you and mail order competition, was also explained by President Donoghue. He urged more strict credit policies in the plumbing and heating industry, and expressed the opinion that more stringent credit rules would be of benefit to all three branches of the industry. Mr. Donoghue told of the plans that are being made for the national convention in New York City in June, and also outlined the work that is being done by the Plumbing and Heating Industries Bureau, which organization he strongly endorsed.

Joseph G. Hildebrand, secretary-manager of the Bureau, spoke later in the meeting and told in detail of the work that the Bureau is doing. He described the publicity work that is being carried on in newspapers and general magazines and the bookkeeping and other services that the organization offers the contractor. Mr. Hildebrand also told of the results of the survey conducted in Cincinnati on direct-to-you sales.

David S. Sanderson, chairman of the educational committee of the national association, urged the delegates to give more time and thought to their meetings and to support their officers in every possible way. He endorsed plumber-utility company co-operation in the sale of appliances, and urged his plumber-hearers to take a more active part in civic affairs.

George Hoffman, of Crane Co., Chicago, addressed the convention on "The Forte of the Plumber in the Economic Changes of Today." He said that there is business awaiting the person who goes after it with a positive attitude, and that courage, confidence and common sense were prime needs of the day. The speaker described health conditions in various cities and towns to show that a tremendous market exists for plumbing and heating products. He stressed the need for improvement in plumbing codes.

Mr. Hoffman said that there is a much firmer tone in the pottery and enameled ware markets, adding that wholesale prices on plumbing and heating materials have been completely liquidated. He pointed to the air conditioning market as an opportunity for the heating contractor, and said that the postponement of building operations in 1930 and 1931 has resulted in an accumulation of potential business that is awaiting the energetic attack of the master plumber and heating contractor.

In his annual report, President Williams told of the work done by himself and the other officers during the year. He said that meetings were held in various parts of the state during the year and that interest of the national and state association had been well maintained. Mr. Williams also told of progress made in re-organizing the master plumbers in Pittsburgh. He recommended that the mid-winter meetings be continued in the future and this later received the endorsement of the delegates.

Carl J. Forve submitted complete reports as secretary-treasurer of the association. The report of the legislative committee was rendered by James H. Lutz, Jr., who recommended that the Pennsylvania delegates support the legislative program of the national association. Mr. Lutz pointed out that the Central Pennsylvania Ad-

Part of the group picture of delegates and guests attending the annual convention of the Pennsylvania State Association of Master Plumbers

Another section of the group picture of delegates and visitors at the Pennsylvania master plumbers' convention, held at Wilkes-Barre

visory Board has promised to support the Pennsylvania master plumbers in their state plumbing code work.

Harry L. Stilwell of Philadelphia described the educational meetings held by his association. He stressed the importance of high grade workmanship as an insurance against business failure. The speaker expressed the opinion that 80 per cent of the materials sold were sold as a result of the purchaser's confidence in the seller and not on a price basis.

SELLING OF APPLIANCES

Hugh H. Cuthrell, chairman of the Committee on Trade and Dealer Co-operation of the American Gas Association, spoke on the attitude of the gas companies in the matter of trade relations. He offered a number of suggestions, based on the experience of the gas industry, which he felt would be of help to the master plumbers in evolving a more comprehensive merchandising business. He said the plumber must study business organization and modern business methods in order to make progress. "Merchandising is a scientific undertaking which requires a thorough and detailed knowledge of a wide variety of pertinent subjects," the speaker said. "For example, you must know your market possibilities. The degree of saturation of that market as to every type of gas appliance that you intend to sell. The purchasing power of your customers. Sales methods and salesmen's compensation plans. The selection of the particular appliance which will give your customer the best satisfaction. Financing of customer's paper on time payment paper plans. Warehousing and stock control. Delivery and servicing."

W. R. Zockie, technical engineer for the American Radiator Co., New York City, delivered an interesting talk on humidification, and outlined the potential market in the domestic air conditioning field. M. D. Robinson of Crane Co., Philadelphia, president of the Central Pennsylvania Advisory Board, explained the purpose of this organization. C. W. Wanger, president of Woodward-Wanger Co., Philadelphia, stressed the importance of association work in addressing the convention.

A splendid program of entertainment was arranged for the visitors. On Monday evening a reception was held at the Mallow-Sterling hotel, and on Tuesday the ladies were taken on an automobile trip. That evening a card party was given at the hotel for the ladies and a stag party at the Elk's Club for the men. Wednesday noon the ladies had a luncheon, and that evening the annual banquet and dance was held.

W. W. Lewis was general chairman of the convention committees, and Priestly R. Johnson was convention treasurer. The various convention committees were as follows:

Executive Committee: Walter C. Williams, James A. O'Rourke, John Scrimgeour, William T. Evans, Carl J. Forve, Leo F. Steadle, James A. Redington and John Brislin.

Finance Committee: Joseph Walsh, chairman, G. Raymond Burt and Carl W. Schultz. Exhibit Committee: Charles Eckenrode, chairman, William Wright, Joseph Ostrosky, John Zamites and John Barran.

Reception Committee: Richard Turner, chairman, Peter Forve, Martin Kaiser, John Comiskey, John T. Evans, John J. Cawley, D. Lloyd Evans and Bernard Ostrosky.

Publicity Committee: John Mincavage, chairman, Ralph Hallock and Ray Burritt. Banquet Committee: Dan W. Davis, chairman, Charles Eckenrode, Ira Rowbotham and John Mincavage.

Hotel Reservation and Automobile Committee: James A. O'Rourke, chairman, P. J. Kelly, John Brislin and J. J. Stefancin. Entertainment Committee: William J. Delaney, chairman, P. M. McCarthy, Edward A. Spohrer and James A. Casey.

Dance Committee: Carl J. Forve, chairman, Thomas R. Davis and Alex. Scrimgeour. Badge and Souvenir Committee: Fred C. Johnson, chairman, Harry E. Miller and Leo Levine.

Program Committee: Walter C. Williams, chairman, Carl J. Forve, John Scrimgeour, James A. Redington and Thomas Turner. Registration Committee: Leo J. Steadle, chairman, Richard Turner and James A. Coombs.

More Railroads Buy Air Conditioning Equipment

Orders for air conditioning units have been spreading recently. Pullman Car & Mfg. Corp. is installing these units in dining and parlor cars for four roads.

Chesapeake & Ohio and the Baltimore & Ohio railroads will operate cars with air conditioning equipment between Chicago and New York, as well as between Chicago and Washington. It is understood that New York Central and the Pennsylvania systems are preparing to use cooled dining cars on 18-hour trains between Chicago and the East. Two years ago, Baltimore & Ohio equipped one train with cooling apparatus.

C. A. Hjerpe, state president

Connecticut Names Utility Committee

DEFINITE progress in the establishment of improved trade relations with the public utility companies in the state was the outstanding result of the annual convention of the Connecticut Master Plumbers Association, held at New Britain on May 11.

The delegates adopted a resolution providing for the organization of the "Connecticut Master Plumber-Utility Joint Committee." The purpose of this committee is "to improve conditions pertaining to the sale and installation of gas and electric appliances (and equipment) in Connecticut, and to work together to this end."

The resolution provides for adoption by the joint committee of the Connecticut Merchandising Principles, which incorporate the codes of merchandising practice which have been approved and are recommended by the American Gas Association, the National Association of Master Plumbers, and the National Electrical Merchandising Joint Committee.

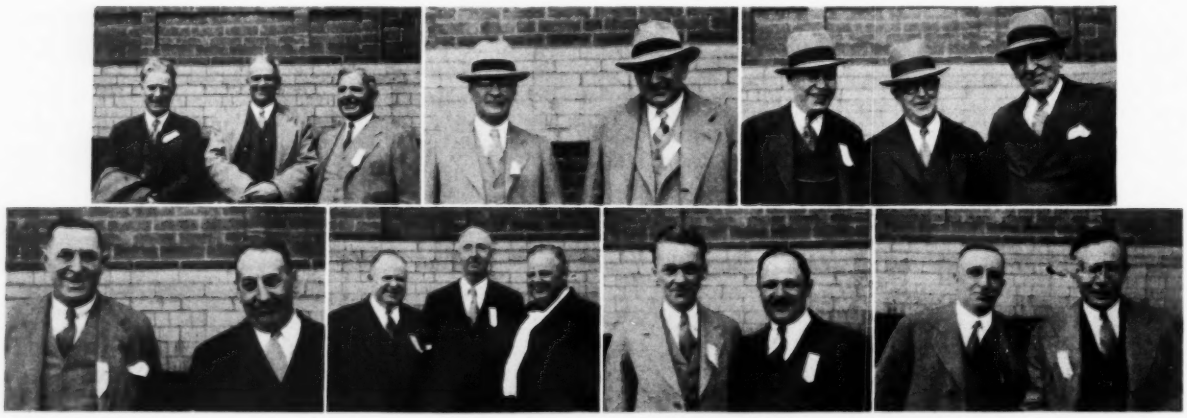
This action by the convention followed a long period of effective effort on the part of President Joseph E. Berger of Bridgeport, his officers and board of directors.

The following officers were elected for the ensuing year: President, C. A. Hjerpe, New Britain; first vice president, M. J. Fahey, Waterbury; second vice president, G. E. Purdue, New Haven; financial secretary, J. M. Forger, Norwalk; recording secretary, A. A. Mills, New Britain; treasurer, George Wigglesworth, Naugatuck. Delegate to national convention, D. J. Burns, Wallingford.

Resolutions were adopted condemning credit abuses, pledging co-operation with the Plumbing and Heating Industries Bureau, and pledging attendance at the forthcoming national convention.

H. R. Starrett, vice president and general manager of the New Haven Gas Co., outlined the objectives of the Connecticut Merchandising Committee in addressing the convention. He described the co-operative efforts of the past several months on the part of the utility companies in the state and the state association of master plumbers to come to a constructive working understanding, whereby the plumbing trade might be enabled to become enthusiastic dealers in gas appliances.

Mr. Starrett expressed the hope that the preliminary work of the three factors would lead to the formation of



Top row, left to right: W. D. Keating, Duquesne Specialty Co.; W. S. George, Good Mfg. Co.; John D. Cox, John Maneely Co.; Claude J. LeRoux, New Britain; Ernest H. Stepp, C. S. Mersick & Co.; J. H. Allen, manager Worcester branch, Crane Co.; B. F. Judd, New Haven, Conn.; T. H. Dawson, Jr., manager, Boston branch of Crane Co. Bottom row: F. C. Walker, New Britain, sergeant-at-arms; J. F. Mongrain, Bridgeport, president, Bridgeport association; P. J. McMahon, Norwich, Conn.; Robert Rock, Bridgeport; Ernie Hutt, New Britain, Plumbing Supply Co.; J. J. Carter, Standard Sanitary Mfg. Co.; J. L. Fierberg, Hartford; J. F. Sheppard, C. S. Mersick & Co.; M. A. Fierberg, Hartford

an officially recognized and permanent state joint utility commission. Such a commission, he said, would bring about the formation of local responsible plumbing groups and set in motion much larger prospects for the sale and installation of appliances than in the past.

Mr. Starrett expressed the opinion that adherence to the Connecticut Merchandising Principles would eliminate much of the misunderstanding of the past.

The speaker pointed out that a co-operative selling plan was undertaken in New Haven two years ago, and that it has worked out successfully. In 1931, he said, 213 dealers, mostly master plumbers, did business with the New Haven Gas Co., covering the following list of appliances: 224 gas ranges; 316 automatic water heaters; 39 tank water heaters; 28 refrigerators; 22 house heating boilers; 102 appliances for hotels, etc., making a total of 731 appliances. A total of $40,000 in accounts was turned over to the gas company for financing, and the sales commission handed over on the amount was more than $9,000.

Whereas thus far in 1932, this type of business with the plumbing trade has increased about 48 per cent over like sales for the same period of 1931, the sales through the gas company's own salesmen have decreased 41 per cent, Mr. Starrett said.

P. W. Donoghue, president of the National Association of Master Plumbers, reviewed in detail the accomplishments of the National association during the past year. He emphasized the importance of establishing trade relations with utility companies. He pointed out that 165 utility companies are now co-operating with master plumbers' associations. President Donoghue said that if these co-operative relations can be made to accomplish as profitable results elsewhere as in his own home city of Boston, a new era is in sight for the plumbing trade.

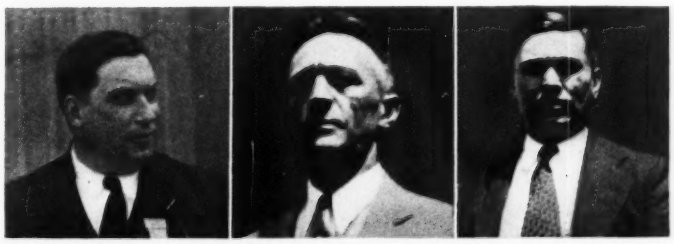
Jere L. Murphy of New York City, chairman of the National Standardization Committee, told his conception of plumbing salesmanship, his remarks being cleverly applied to the main points brought out in Mr. Starrett's address. Mr. Murphy stressed the point that the plumber must be a success as a salesman in order to continue in business.

Joseph G. Hildebrand, secretary-manager of the Plumbing and Heating Industries Bureau, addressed the convention on the aims, purposes and accomplishments of his organization.

J. Preston Perham, of West Roxbury, Mass., secretary of the National Association of Master Plumbers, addressed the meeting on the subject of association affairs.

Following are the committees from the New Britain association which were in charge of arrangements: Convention committee, A. A. Mills, chairman; reception committee, Andrew Johnson, chairman, Albin Dressel, Claude J. Leroux and Richard Lang; general committee, Louis Croll, chairman, Walter Sullivan, J. G. Simpson and Fred C. Walker; invitations and speakers committee, C. A. Hjerpe, chairman, Carl E. Ericson, A. A. Mills and A. E. Weiant; entertainment committee, Herman Feigenbaum, chairman, Arthur J. Kallberg and Isadore Levine; parking and transportation committee, Thomas G. Firth, chairman, Fred Loomis, Juddie Landgren and Ernest Weiant.

Plan to Enforce New Kentucky Law



John Wilbers, Louisville, state president; Albert F. Hirsch, Louisville, vice president; O. H. Mitzlaff, Louisville, secretary-treasurer

DISCUSSION on the new state plumbing law and means of enforcing it was the outstanding feature of the 49th annual convention of the Kentucky State Association of Master Plumbers, held at Frankfort on May 16, 17 and 18. The discussion was led by members of the Kentucky State Plumbers' Joint Sanitary Board.

John M. Wilbers of Louisville was re-elected state president, and the newly elected vice president is Albert F. Hirsch, also of Louisville. O. H. Mitzlaff of Louisville was re-elected secretary-treasurer.

President John M. Wilbers called the meeting to order. After the invocation by Rev. Hampton Adams, Mayor T. E. Kenney, Frankfort, extended welcome to the city.

John M. Wilbers rendered his report as president of the association during the past year. He told of his trips to other cities and of his work on the state plumbing code.

Albert F. Hirsch of Louisville reported for the legislative committee. He explained the new state plumbing code which was passed during the past year.

Secretary-Treasurer O. H. Mitzlaff rendered his reports covering both offices.

The president appointed the following committees: Resolutions, F. H. Tice, Lexington; A. F. Hirsch, Louis-

Top row, left to right: T. H. Diehl, Sr.; Al. D. Burger; W. R. Seestadt; Joe Grabowski; E. B. Kleine, national vice president; Mrs. Kleine; Norman J. Radder, Plumbing and Heating Industries Bureau; Owen Caplinger, Charles Whitehead, John Scott and Paul J. McDaniel, all of Frankfort. Bottom row: M. R. Jackson and J. P. Smith, both of Chase Brass & Copper Co., Inc.; F. H. Tice, Lexington; N. F. Alt, Standard Sanitary Mfg. Co., Lexington; H. H. Schuler, Covington, president, Kenton-Campbell Counties association; George Schroeder, Fort Thomas; F. J. Lavanier, Covington; J. E. Kennedy, Fort Mitchell; Mr. and Mrs. Gilbert L. Norcutt, Henderson

ville, and Gilbert Norcutt, Henderson; auditing, D. N. Larkins, Paducah, J. E. Kennedy, Fort Mitchell, and Charles Whitehead, Frankfort; sergeant-at-arms, George Schroeder, Fort Thomas, and Robert Layer, Louisville.

The report of the Kentucky State Plumbers' Joint Sanitary Board was presented by Edwin P. Kaiser, state secretary of the Joint Sanitary Committee.

It covered the new state plumbing law and the various stages of the work required to have it passed by the legislature and signed by the governor.

The subject was discussed by members from various sections of the state.

The principal speaker of the convention was National Vice President E. B. Kleine of Cincinnati, Ohio.

ADDRESS BY VICE PRESIDENT KLEINE

Mr. Kleine stated that although the direct-to-you and mail order houses were giving the contractor a real problem to face, what is more dangerous to the retail branch of the industry is the fact that some manufacturers and wholesalers are showing a desire to sell direct to the public. He stated that the national association is strictly against this policy, whether or not a commission is held for the retailer. Further, that National President P. W. Donoghue wants it known to everyone in the industry that the national association is against direct selling by manufacturers or wholesalers, under any plan whatever. Mr. Kleine stated that the present method of distribution, manufacturer to wholesaler to retailer to publis has been in effect for 50 years, has proven its worth and should be maintained.

He touched on utility merchandising and urged members to work for co-operation between plumbers and utilities in their various cities.

Mr. Kleine called attention to the various bills now before Congress for separation of contracts, etc., and urged the Kentucky association to give them backing.

He touched on the Cincinnati Survey which has been reported in earlier issues of DOMESTIC ENGINEERING.

Mr. Kleine criticised those plumbers who are getting protection from the national association, although not members. He said they should be brought into the ranks.

He lauded the Plumbing and Heating Industries Bureau and the work it is doing for the industry, and said it should be supported by all branches.

He urged a large delegation from Kentucky to attend the national convention in New York City. In conclusion, he called attention to the fact that the national association has joined the Construction League of America.

J. R. "Shorty" Lewis of DOMESTIC ENGINEERING spoke on the "Spend for the Home in 1932" campaign sponsored by this publication and urged the members to participate in this campaign. He also called attention to the aggressive policy of various contractors in contacting the public by letters, calling attention to lower prices of material and labor and that they can buy just as cheap through established dealers as from the others.

The representatives of manufacturers and wholesalers present were introduced and all responded with short talks.

Norman J. Radder of the Plumbing and Heating Industries Bureau told the members that if they want to stay in business they must know their costs and how to sell. He explained the bookkeeping system of the bureau and also touched on its other activities.

A resolution was adopted requesting the national association to ask manufacturers of air conditioning units to confine their sales to plumbing and heating dealers.

Another resolution adopted urged more loyalty among the members of the industry, and that each member strive to become a better business man.

Resolutions of thanks were extended to the national association, the Plumbing and Heating Industries Bureau and DOMESTIC ENGINEERING for having representatives at the convention.

Vice President-elect Albert F. Hirsch suggested that an intensive membership drive be made.

John E. Kennedy of Fort Mitchell and Henry Schuler of Covington were elected delegates to the national convention. Frank J. Lavanier, Covington, and Ben Hurst, Richmond, were elected as alternates.

The secretary was instructed to send a letter of condolence to Mrs. E. D. Hornbrook, expressing regrets on the death of Past National President Hornbrook.

Oregon Will Meet D-t-u Competition

MASTER plumbers of Oregon, battling for renewed confidence in the industry, will fight back to normalcy along a manifold program approved at the thirty-second annual convention of their state organization, held at The Dalles, May 13 and 14. The convention, one of the most successful ever held by the organization, was concluded with the re-election of the entire staff of officers and reappointment of the zone directors of 1931.

The program as approved by the delegates attending the convention includes:

1—Adoption of a new plumbing code designed to rid the industry of unfit workmen.
2—Approval of a move to divorce the plumbing contract from the general contract on government work.
3—Action to aid in the fostering of the plan for the betterment of apprentice education.
4—Action seeking the repeal of the Sherman anti-trust law.
5—Campaign to better merchandising methods.
6—Campaign to compete with direct-to-you sales organizations by the instigation of an aggressive advertising campaign.

Officers of the organization re-elected for the coming year are R. D. Rennie, Portland, president; E. O. Pratt, Salem, vice president; Walter J. Widmer, Portland, secretary, and T. J. Rowe, Portland, treasurer.

The convention this year found the delegates of one mind—that some action must be taken to defeat the encroachment of direct-to-you sales organizations.

Continued enforcement of the Sherman anti-trust law as it stands on the federal statute books is one of the greatest drawbacks on the industry today, Samuel Murhard, of Portland, told the delegates.

The bolstering of the state plumbing code came in for considerable discussion by the delegates who approved the plan to seek legislation which would increase the license fee, require physical and mental tests of all applicants and broaden the scope of the work of the state plumbing inspector.

The present plumbing code which permits anyone to pay a fee of five dollars and obtain a license to contract plumbing is a serious defect in the organization, Fred Van Hoomissen, president of the Portland Master Plumbers' Association and one of the leaders of the convention discussions, told the delegates.

"The state law should be so drafted that it would require a fee of $100 for all plumbers in the rural districts," he said. "Portland plumbers now are operating under a code which carries sufficient teeth to comb the fit from the unfit plumbers. The state plumbing inspector should be instructed to work with members of the board of health, as our tradesmen should be inspected physically the same as others.

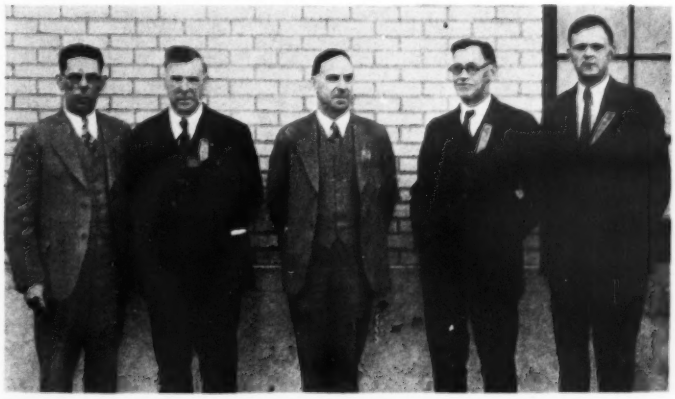
"Each time a man who knows nothing of the plumbing business takes out a license, and he is permitted to do plumbing under the present code, he becomes a competitor of all of us. If he turns out poor work, his work reflects upon all of us and this is the thing that we are going to be forced to fight against. A strict state code would do much to remedy the present situation."

Plumbers of the district were urged to modernize places of business and properly merchandise their wares so that they will be able to compete with those organizations selling direct to the consumer. It was pointed out that the Portland association last year carried on an extensive advertising campaign which explained why plumbing work and materials should be purchased from the established master plumber. This was one of the points stressed by Roy E. Thompson, Tacoma, Wash., a member of the board of directors of the national association. The time is past when the active master plumber can carry a small stock, without a semblance of display, and continue in business, Mr. Thompson told the delegates.

The delegates approved the plan to carry on an advertising campaign more extensive and consistent than ever before. A second campaign is being planned by the Portland group in which it is hoped to break the depression bonds which have hampered the industry for the last three years.

The practice of awarding plumbing and heating contracts as part of the general contract was condemned by delegates as unfair to the plumbing trade.

Apprentices, now permitted under state legislation to train for the craft, in many of the smaller centers are securing the needed education in the public school courses, designed by officials of the state association, according to the report of the apprenticeship committee. The report states that closer affiliation with the work of the apprentices will aid the entire industry.



Left to right: E. O. Pratt, Salem, state vice president; Roy E. Thompson, Tacoma, Wash., national director; Robert Rennie, Portland, new state president; T. J. Rowe, Portland, treasurer; and Walter Widmer, Portland, secretary

SUPPLY NEWS

FOR MANUFACTURERS, WHOLESALERS, SALESMEN

Standard Sanitary Mfg. Co. Elects New Director

At a directors' meeting held in Pittsburgh, Pa., on May 6, John J. Hall was elected a director, member of the executive committee and vice president and general manager of sales of the Standard Sanitary Manufacturing Co.

John J. Hall

Mr. Hall's service with the company has covered a wide and important scope, including various sales representation capacities throughout the East and from there to the Pacific Coast as sales manager of the Seattle office and then to Los Angeles in charge of that unit of the company.

His successful handling of these positions, his genial disposition and proven ability for management merited his next advancement to that of general manager of sales of the European Division of the Standard Sanitary Mfg. Co. This assignment represented the task of alignment of all sales and promotional activities attendant on the introduction of plumbing fixtures throughout Europe, which were being produced at the new European plants of the company.

After efficiently carrying out his duties abroad, Mr. Hall was appointed assistant general manager of sales for the company, with headquarters in Pittsburgh. In this capacity he served for more than a year and was then given the promotion mentioned above.

Will Manufacture Line of Gas Burners

The Beck Engineering Combustion Company has been organized at St. Louis, Mo., by Vernon S. Beck, to manufacture a line of gas burners including types similar to those already on the market with new burners manufactured under new patents. Five general types will be offered in numerous sizes. The new company will offer a line to meet the demand for specification business.

Mr. Beck, for the past five years, was chief engineer for the Sonner Gas Burner Co. of Winfield, Kans. Prior to that he was engaged in business for himself in Minneapolis in engineering construction work. He holds degrees in civil, mechanical and electrical engineering from some of the best known schools in the United States.

Enters Supply Business in Detroit

The Arron Plumbing Supply Co. is the name of a new plumbing and heating wholesale establishment which opened for business in Detroit, Mich., on May 1. The concern is located at 9530 Livernois avenue.

Will Manufacture Pressure Type Oil Burners

Scott-Newcomb, Inc., is the name of a new concern that has just been organized in St. Louis, Mo., to manufacture and sell a line of pressure type oil burners. Lewis L. Scott, formerly vice president of Electrol, Inc., St. Louis, and E. C. Newcomb, at one time consulting engineer for the same concern, are the organizers of the new company. Associated with Messrs. Scott and Newcomb, who are president and chief engineer, and vice president and consulting engineer, respectively, are J. P. Feeley, vice president and general manager in charge of sales, and A. J. Lindsay, vice president and treasurer.

Buys Merco Nordstrom Valve Co.

The Pittsburgh Equitable Meter Co., Pittsburgh, Pa., has purchased the Merco Nordstrom Valve Co., Oakland, Calif. The Pittsburgh concern will continue to manufacture the former Merco company's line of products at the Oakland plant, enlarging it to twice its present size in order to add its own products to the line.

Combustioneer, Inc., Moves to Springfield, Ohio

Combustioneer, Inc., manufacturer of automatic coal burners, has moved its headquarters from Goshen, Ind., to Springfield, Ohio, where its executive offices will be located at Columbia street and Bechtle avenue.

The company was organized in February, 1928, with offices and assembly plant at Chicago, Ill., and a gear box plant at Springfield. Soon afterward larger quarters were secured in Cicero, Ill., and about two years later the move to Goshen, Ind., was made, bringing under one roof the executive offices, sales, assembly plant and service departments.

Consolidation of the assembly and manufacturing departments into one building is made possible by the move to Springfield. The company has distributed an attractive booklet of approximately thirty pages which describes the facilities of the new quarters.

Imperial Brass Mfg. Co. Acquires C. M. Smillie & Co.

The Imperial Brass Mfg. Co., Chicago, Ill., has purchased the patent rights and entire line of precision tubing cutters, flaring and reseating tools and tube benders formerly manufactured by C. M. Smillie & Co., Detroit, Mich.

The Imperial company was recently awarded the contract for the building of the sanitary equipment to be used on the new Navy airship, the Macon ZRS-5. The Macon is a sister ship of the Akron, the world's largest dirigible. The Imperial Brass Mfg. Co. also furnished the sanitary equipment for the Akron.

Buys International Radiator Corp.

Governale Bros., Brooklyn, N. Y., manufacturers of radiator enclosures, have taken over the manufacture and sales of the International Radiator Corp., Port Chester, N. Y.

Wagner Electric Corp. Organizes Canadian Firm

Announcement has been made of the formation of the Wagner Electric Mfg. Co., Ltd., with head offices and factory at 183 George street, Toronto, Ontario, Can., and offices in Montreal and Winnipeg. This new Canadian company has acquired exclusive manufacturing and sales rights for the products of the Wagner Electric Corp., of St. Louis, Mo., with the exception of its automotive equipment.

Will Represent Bonney Forge & Tool Works

D. H. Skeen & Co., Chicago, has been appointed distributor by Bonney Forge & Tool Works, Allentown, Pa., for its line of welding fittings. The Skeen company will handle sales in the Chicago district, and will also stock the complete line.

A. M. Byers Co., Moves New York Office

A. M. Byers Co. of Pittsburgh, Pa., has moved its New York City office from 110 East 42nd street to 70 Pine street. There has been no change in personnel.

Production Resumed at Soil Pipe Foundry

Central Foundry Co., New York City, has resumed operations for the production of soil pipe at its Bessemer, Ala., foundry. Approximately 200 men have been put to work at this plant.

Theodore Koven Dies in Alaska

Theodore Koven, president of L. O. Koven & Bro., Inc., Jersey City, N. J., manufacturers of boiler and sheet metal products, was found dead by a searching party on Mt. McKinley, Alaska, May 14. It had been his ambition to climb Mt. McKinley and it was in attempting this and to study the cosmic rays, that he met his untimely death. He was accompanied on the trip by Charles Carpe, scientist, who was also found dead.

Mr. Koven, who was 28 years of age, was graduated from the Stevens Institute of Technology in 1926 and then entered his father's business, succeeding his father as president on the latter's death. He was unmarried and is survived by his mother and a brother, Gustave Koven.

Selling Problem Discussed at Big Meeting in Chicago

Between 700 and 800 plumbing and heating dealers, and wholesalers' and manufacturers' representatives met in Chicago on the evening of May 9 to hear W. J. Spillane, president of the Central Supply Association, describe the features of the merchandising plan which his organization is sponsoring.

Briefly, the plan calls for the prominent display of prices on fixtures in master plumbers' and wholesalers' display rooms. It is felt that this will clarify the price uncertainty which some feel has prevailed in the plumbing and heating industry during past years. The plan also calls for more active sales efforts by all three branches of the industry.

In his address, Mr. Spillane strongly urged the plumbing and heating dealers present to exert their best efforts to improve their selling methods.

Re-elected President of Scovill Mfg. Co.

E. O. Goss has again been named president and general manager of the Scovill Mfg. Co., Waterbury, Conn. J. H. Goss has been named vice president and general superintendent. G. A. Goss, C. P. Goss and Bennet Bronson were named vice presidents. L. P. Sperry has been named treasurer and W. M. Goss, secretary.

Opens Branch in Canada

Air-way Electric Appliance Corp., Toledo, Ohio, has organized Airway, Ltd., to manufacture for Canadian trade. Property has been leased at Windsor, Ont., and the plant will be equipped at once.

Will Represent Evins F. Glore & Son, Inc.

Derbyshire, Mack & Morgan, Inc., Philadelphia, Pa., have been appointed the exclusive sales representatives of Evins F. Glore & Son, Inc., New York City, in eastern and northern Pennsylvania, southern New Jersey and the state of Delaware.

Will Handle Southern Business Through Richmond, Va., Branch

Pierce, Butler & Pierce Mfg. Corp., Syracuse, N. Y., has completed arrangements to handle its business in the South through its branch at Richmond, Va., having discontinued the operation of its branch at Savannah, Ga., on May 15th.

Will Represent Copeland Products, Inc.

Copeland Products, Inc., Mt. Clemens, Mich., has appointed Geo. A. Clark & Son, Inc., Minneapolis, Minn., as its distributor in Minnesota, Wisconsin and the Northwest territory formerly represented by the Geo. C. Beckwith Co. The latter concern was merged with Geo. A. Clark & Son several months ago.

Industry's Credit Problems to Be Discussed at National Meeting in Detroit

Many credit executives of manufacturers and wholesalers in the plumbing and heating industry are planning on attending the group conference on June 21, to be held in conjunction with the annual convention of the National Association of Credit Men, which will be held at Detroit, Mich., June 20-24.

As chairman of the group conference, R. L. Griffiths, treasurer, International Heater Co., Utica, N. Y., will present subjects of real interest to the heating and plumbing trade. L. J. Frost, Norman Boosey Mfg. Co., Detroit, is vice chairman of the group conference.

Those attending the convention, whose responsibilities include the control of credits, will be interested in the views expressed regarding installment buying and its effects upon sound credit structure. Advantages and disadvantages of installment buying will be thoroughly discussed with relation to the expansion or deflation of the volume of installment selling.

"The Craze for Volume at the Expense of Wise Credit Extension" will be among the discussions which will tend to show that credit men are becoming more "sales conscious" in analyzing credit extension as applied to volume sales. Speakers will also talk of the trend toward the elimination of competition through the individual extension of credit facilities and demonstrate why this practice has been condemned by students of credit selling.

The worth of local credit groups and methods of stimulating interest and loyalty to such associations will be explained in detail. Practical suggestions will be put forth toward instructing the group in creating a common local interest in credit information bodies.

Training customers to develop "prompt pay" habits is another program topic. Experiences in this phase of improving credit conditions will be described. It is hoped to bring before the group definite information on credit investigation methods that will be applicable to local conditions and that may be used as a basis in any community for establishing credit limits.

Iron Fireman Mfg. Co. Holds Annual Training School

The Iron Fireman Mfg. Co., Cleveland, Ohio, recently held its third annual training course for dealers and installation and service engineers at its plant in Cleveland. During the course the men attending the school were given instruction in the principle of combustion, the application of the company's line of stokers to various types of high and low pressure boilers, and how and why the stokers accomplish the work for which they are designed. Considerable time was devoted to the study of various kinds of coal available, and the combustion characteristics of these coals when stoker and hand fired.

The school faculty for the 1932 session consisted of the following factory engineers: W. H. Gray, chief engineer; W. B. Hughes, engineer in charge of school; J. W. Carl, field engineer, Richmond, Va.; W. C. Kelly, field engineer, Detroit, Mich.; and C. C. Cram, electrical engineer, Portland, Ore.

Picture taken at the annual Mechanical and Combustion School for dealers and installation and service engineers at the plant of the Iron Fireman Mfg. Co., Cleveland, Ohio

Displays Gas Heating Equipment

A showroom displaying its line of gas house-heating equipment has been opened at 130 East avenue, Rochester, N. Y., by Heatmaster Products, sales division of the Surface Combustion Corp., of Toledo, Ohio. The Rochester branch, headed by Charles B. Charmatz as manager, is one of the first of its type to be opened by the Toledo firm. Heatmaster Products has taken over the personnel of the gas house-heating department, discontinued by the Rochester Gas & Electric Corp.

Fire Damages Valve Plant

A fire resulting in a loss of about $35,000 worth of equipment recently damaged the Monessen, Pa., plant of the Golden-Anderson Valve Specialty Co., Fulton building, Pittsburgh, manufacturers of valves and steam specialties. Plans for re-building the destroyed portion of the factory are now well under way.

Moves Gas Research Laboratory to Buffalo, N. Y.

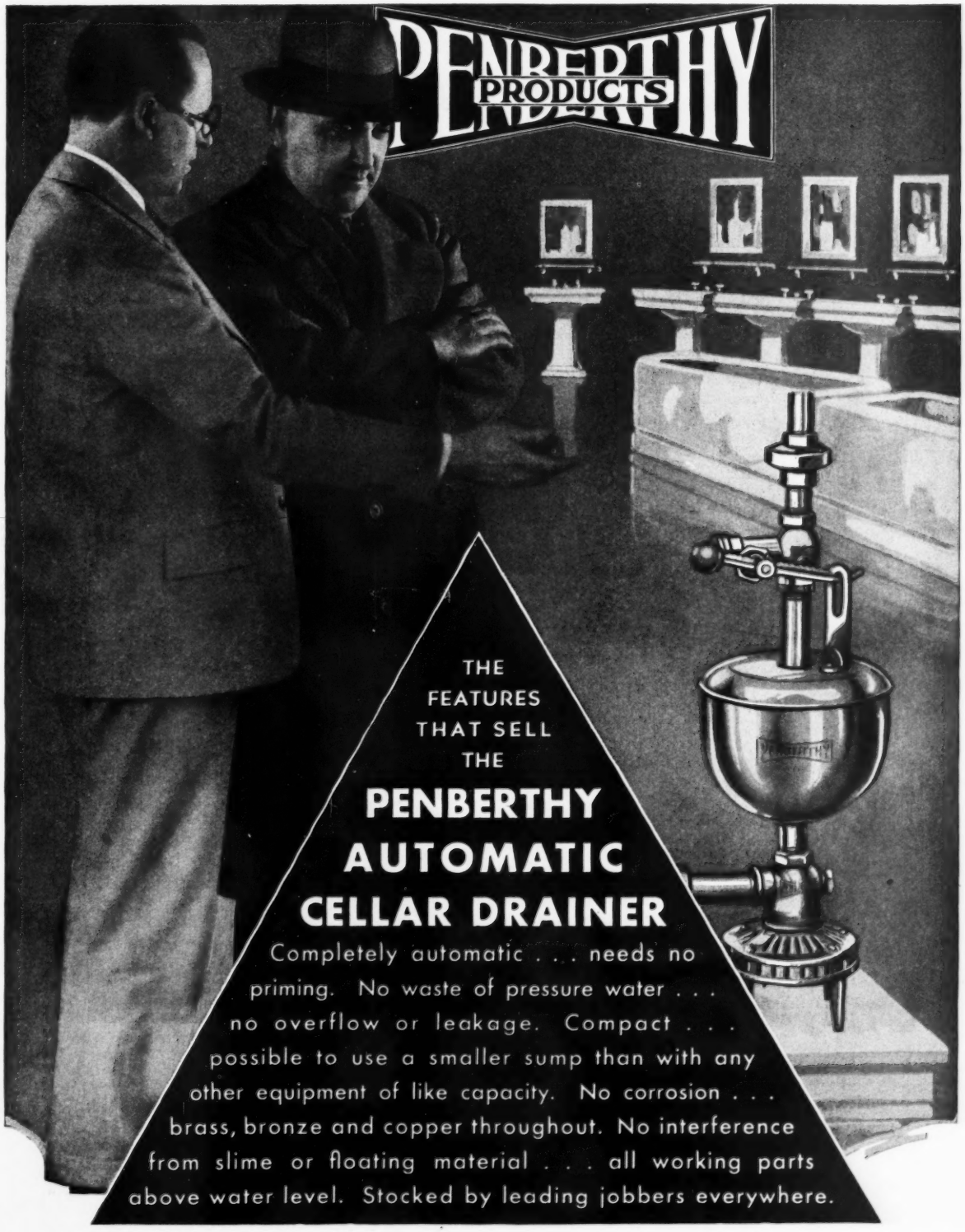
The American Gas Products Corp. has moved its gas research laboratory from New Rochelle to Buffalo, N. Y. Carl Flink will continue to direct the work from New York. A staff of approximately ten men is engaged in testing the development work, and an extensive program along these lines is planned for the future.

Opens Sales Branch in Grand Rapids, Mich.

The Reliance Electric & Engineering Co., Cleveland, Ohio, has established a branch sales office in Grand Rapids, Mich., to cover northeastern Michigan. Marshall T. Ball is in charge of the office, which is located at 208 Fuller avenue, S. E.

Appoints New England Distributor

The Pennsylvania Range Boiler Co., Philadelphia, Pa., has appointed the General Fittings Co., Providence, R. I., as its distributor in the New England territory.



THE FEATURES THAT SELL THE

PENBERTHY AUTOMATIC CELLAR DRAINER

Completely automatic . . . needs no priming. No waste of pressure water . . . no overflow or leakage. Compact . . . possible to use a smaller sump than with any other equipment of like capacity. No corrosion . . . brass, bronze and copper throughout. No interference from slime or floating material . . . all working parts above water level. Stocked by leading jobbers everywhere.

PENBERTHY INJECTOR COMPANY

ESTABLISHED IN 1886

DETROIT

CANADIAN PLANT WINDSOR, ONT.

Swing those Jobs...

with

PR PIPE

(PAUL REVERE PIPE)

You want business to improve? Then take a tip from James T. Williams, Plumbing Contractor, of Utica, N. Y. He has "specialized in P R Pipe for over 3 years," and he has found "business continuously good."

He says, "As P R Pipe costs less than other non-corrodible pipe, I can take business on a competitive basis. Furthermore, because of the excellence of P R Pipe, I can swing jobs to P R Pipe when iron was originally specified."

Why is Mr. Williams so successful? Because P R Pipe is a newer, better piping system, which brings many new advantages. Study the two pictures to the right, one an installation of P R Pipe (Hard Temper) the other P R Pipe (Soft Temper). Note the advantages of each.

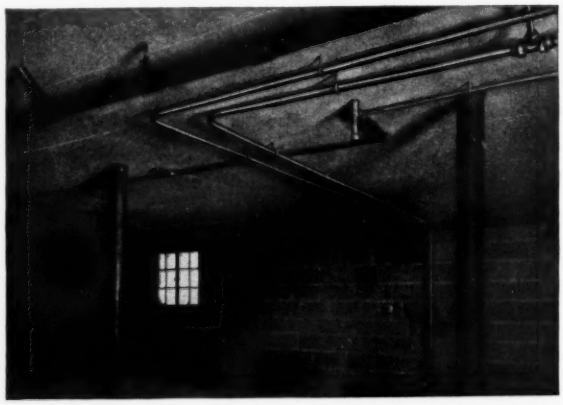
P R Piping Systems are jobs you can be proud of. They are a credit to you . . . a lasting satisfaction to your customers. Use P R Pipe, and like Mr. Williams, you will be able to "swing those jobs" and enjoy "constant good business" with a satisfactory profit.

✣ ✣ ✣

P R Pipe is 99.9% pure copper, completely deoxidized and having a gun-barrel inside finish, free from flaws. It is rust-proof, and has the effective thickness of S.P.S. (standard pipe size) pipe. P R Pipe can be used with all standard compression or solder fittings.

It comes in two tempers: hard, for new work and exposed runs; soft, for concealed replacement work and services.

It will pay you to find out all about P R Pipe. Also about Revere Brass Pipe. For further information, address Revere Copper and Brass Incorporated, 230 Park Ave., N. Y. C.



Study this picture of the exposed part of P R Piping System. P R Pipe (Hard Temper) is used. Notice the fine straight runs, the smooth, machine-made bends. No sagging, and only a few hangers. No threading. Compression fittings . . . and fewer fittings.

Now study this photo of the concealed portion of a P R Piping System. Notice the smooth bends, how many fittings they eliminate. Notice that whatever fittings are necessary are compression joints, all permanently tight. See how simple the piping is. Smoother flow and no water hammer.

Revere Copper *and* Brass

INCORPORATED

P R PIPE

Baltimore *Division, Baltimore, Md.* Michigan *Division, Detroit, Mich.* Higgins *Division, Detroit, Mich.*
Dallas *Division, Chicago, Ill.* Taunton-New Bedford *Division, Taunton, Mass.* Rome *Division, Rome, N. Y.*

EXECUTIVE OFFICES: NEW YORK CITY
GENERAL OFFICES: ROME, N. Y.

Stuart H. Raub Dies of Heart Attack

Stuart H. Raub, president of the Raub Supply Co., Lancaster, Pa., died recently at his home in that city as the result of a sudden attack of heart disease. Mr. Raub was in his 45th year. Although he had not been in robust health for some time, he continued to attend to his business duties as president of the Raub Supply Co., which office he had assumed about three years ago upon the death of his father, Amos K. Raub. In 1907 he entered the employ of the Lancaster Sheet Metal Co., founded by his father and his uncle, and which later was incorporated as the Raub Supply Co. Mr. Raub was treasurer of the company prior to assuming the presidency.

Mr. Raub was prominent in fraternal and civic affairs, having been Past Exalted Ruler of the B. P. O. E.; a Noble of the Mystic Shrine, and a member of the Hamilton club, the Lancaster Country club and Chamber of Commerce. He was a member of St. James' Episcopal church.

He is survived by three children and a sister. Mrs. Raub died several years ago.

Death of Frank H. Hagedorn

Frank H. Hagedorn, of the Cordes Supply Co., plumbing and heating supply concern of Milwaukee, Wis., died recently in that city. Mr. Hagedorn, who was in his 50th year, had been ill only a short time. Burial was in Wisconsin Memorial Park. Survivors are the wife, one son, Harvey J., his mother and three sisters.

Business Personals

CLARENCE M. WOOLLEY, chairman of the board of the American Radiator & Standard Sanitary Corporation, New York, is one of 12 business leaders and bankers called together last week by the federal reserve bank of New York. The committee is being asked to rally banking and business firms behind the government's efforts to improve business. With governmental activities having re-established stability among banks and thus released a great amount of credit, these 12 leaders are being asked to help encourage the freer use of that credit and thus revive business.

HARRY KERR, president of Barber Gas Burner Co., Cleveland, Ohio, is sojourning in Bermuda for a few weeks. He is stopping at the Castle Harbor hotel, at Tuckertown Harbor.

THOMAS H. DAWSON, JR., has been made general manager of the Boston, Mass., branch of Crane Co., succeeding JOHN SLATTERY who has been appointed credit manager. Mr. Dawson in turn is succeeded as the manager of the New Haven, Conn., branch by D. J. MALLOY. Mr. Malloy was formerly of the Long Island City office of the company.

WINSLOW SAMPSON, for many years associated with S. K. F. Industries, has just been appointed district manager at Pittsburgh, Pa., for The Kron Co. of Bridgeport, Conn. He will make his headquarters at 302 Penn avenue.

R. C. CAMPBELL has been appointed representative of the McAlear Mfg. Co. of Chicago, Ill., in Maryland, Virginia and the District of Columbia. He will make his headquarters in the National Press building, Washington, D. C.

ALEXANDER S. HACKLEY, New England sales representative of W. A. Russell & Co., New York City, and Evins F. Glore & Son, Inc., also of New York City, was seriously injured recently in an automobile accident. He is now reported well on the way to recovery.

GEORGE KUEHNLE, JR., has been appointed general distributor in the Cincinnati, Ohio, territory for the Burke Electric Co., Erie, Pa. He will make his headquarters in the First National Bank building, Cincinnati.

JAMES E. PHILLIPS, JR., of Richmond, Va., has been appointed distributor for the Lehman Sprayshield Co. of Philadelphia, Pa., in the state of Virginia. He will make his headquarters at 3115 Grove avenue, Richmond.

J. S. TRITLE has been elected vice president in charge of operations of the Westinghouse Electric Supply Co., wholesale distributor of Westinghouse products. He will assume his new duties immediately in addition to his present position, vice president and general manager of the Westinghouse Electric & Mfg. Co.

THOMAS E. PRICE of Houston, Tex., has been appointed distributor for the Lehman Sprayshield Co. of Philadelphia, Pa., in the southern Texas territory. Mr. Price, who was formerly connected with the Houston branch of Kohler Co., Kohler, Wis., will make his headquarters at 1009 Isabella street, Houston.

O. A. KROOS, secretary and treasurer of the Kohler Co., Kohler, Wis., was recently elected vice president of the newly-formed Wisconsin-Illinois Baseball League. Mr. Kroos has also been re-elected president of the Sheboygan Baseball Association.

MAX F. BURGER, formerly head of the legal and legislative department of the Central Supply Association, has opened an office of his own for the practice of law, at 221 N. LaSalle street, Chicago, Ill. Prior to becoming associated with the Central Supply Association, Mr. Burger was assistant commissioner of the National Plumbing and Heating Institute, Inc. He is a former special assistant U. S. district attorney and at one time was associated with the Department of Justice, anti-trust division.

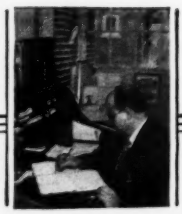
Representatives of Gilbert & Barker Mfg. Co. Meet

The Eastern New England division of Gilbert & Barker Mfg. Co., Springfield, Mass., met recently in that city. It was the quarterly meeting and dinner of the company's dealers, with representatives attending from New Hampshire, Rhode Island and eastern Massachusetts.

W. W. Townsend, merchandising manager for the company, discussed the sales situation in the oil burner field and stated that in 1931 the company had increased its sales 150 per cent. He predictd an even better record for 1932, and described advertising and sales methods devised to make this possible.

Edward Walsh, manager of the Eastern New England division, spoke on efforts being made to bring about closer dealer co-operation with factory distribution and direct factory branches.

MARKETS



BUSINESS REPORTS FROM LARGE JOBBING CENTERS

REPORTS received indicate that a slightly better turnover of plumbing materials was experienced in some jobbing centers during the past fortnight, but heating materials, in keeping with the season, moved at a slow pace. Wholesalers' stocks of plumbing commodities are light, according to reports, and manufacturers' representatives state that buyers for supply houses are confining their purchases to small quantities, according to near-at-hand requirements. Sources of production are in a position to grant quick shipments.

Since our last report appeared, one large manufacturer has announced reductions in prices on its line of welding and cutting blowpipes. Reports have also been received that one large soil pipe manufacturer has resumed production operations at one of its foundries, re-employing approximately 200 men.

"Wholesale collections show an encouraging rise during April with nation-wide sales holding their own," according to a recent survey of the National Association of Credit Men. "Four cities instead of one report collections to be good as compared with the previous survey in which Flint, Mich., noted good collections. Flint has dropped to a fair classification, but Tampa, Fla., Springfield, Mass., Jamestown, N. Y., and Fort Worth, Tex., more than make up for the loss of Flint in the good column," the survey points out. "As was the case in the previous month, no city in the country reports sales as being good, while the slow and fair classifications claim approximately 50 per cent each of the reporting cities."

"The Federal Reserve System has adopted an aggressive policy that is the most hopeful development in the history of this depression," says the business bulletin of the Cleveland Trust Co. "The Reserve Banks are buying government securities at the rate of a hundred million dollars a week. The money paid for these securities is deposited in member banks which promptly use these funds to pay their indebtedness at the Reserve Banks. Already the process has gone so far that the New York banks are out of debt at the Federal, and the larger banks in the interior cities are rapidly moving into the same condition.

"Until recently nearly all member banks have been heavily in debt to the Reserve Banks. The history of banking since the war shows that under such circumstances banks will not readily extend credit unless impelled by abnormal conditions such as prevailed in the speculative period. They will, however, always seek to use idle funds, for they must in order to meet expenses. This means that if the Reserve System adheres to its new policy, the banks will shortly be seeking safe investments, and looking for safe commercial loans."

F. W. Dodge Corporation reports that of the thirteen districts comprising the thirty-seven states east of the Rockies all but three showed higher constructi.n totals in April than in March. April contract totals for the entire eastern area showed an eight per cent gain over March in contrast with a loss of nine per cent between the corresponding two months of 1931. But only slight encouragement is offered by the current pick-up since analysis discloses that the gain was entirely due to public works, especially highways.

Metropolitan New York, Southern Michigan, and the Chicago territory were the exceptions which did not partake in the April advance over March this year. The April total for the entire thirty-seven states east of the Rockies was $121,704,800. Residential building formed $28,894,700 of this total; non-residential building formed $45,515,000; and public works and utilities amounted to $47,295,100.

Residential building gains over March of this year were shown in the New England, Chicago, Central Northwest, Southern Michigan, St. Louis, Kansas City, and New Orleans districts. In the case of non-residential building, gains over March were shown only in the New England, Metropolitan New York, Upstate New York, Middle Atlantic, and St. Louis territories.

In residential building the April contract record showed a loss of almost thirteen per cent from March, and for non-residential building April contracts were almost eight per cent smaller than the March awards.

DOMESTIC ENGINEERING

AN EDITORIAL SECTION

AUTOMATIC HEAT

AUTOMATIC HEAT SECTION

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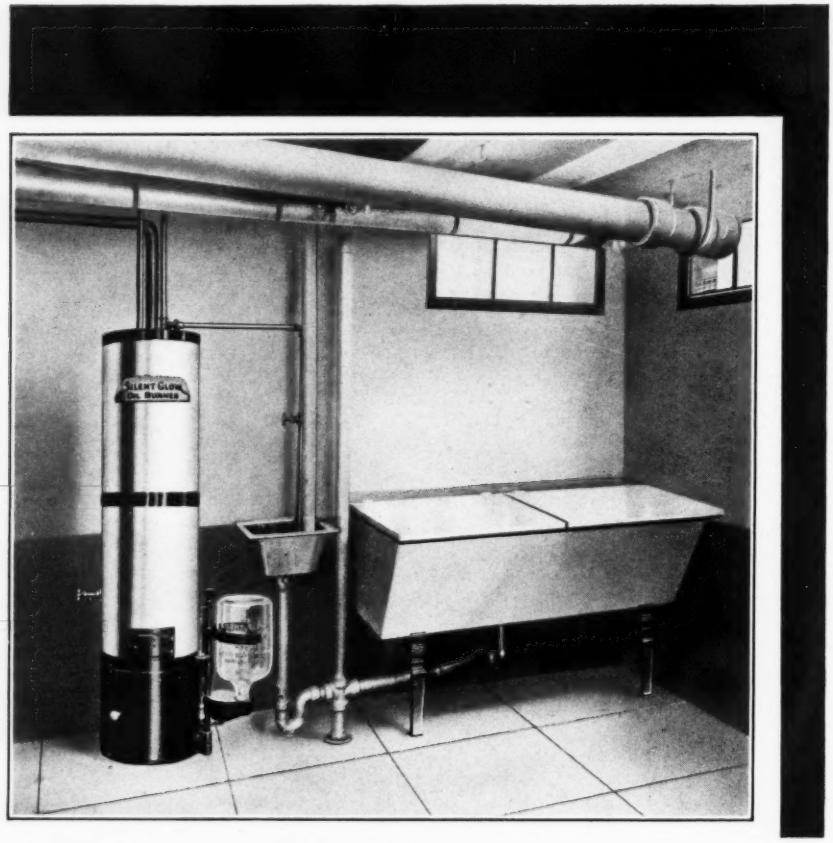

A NEW PROFIT MAKER for Silent Glow Dealers . . . . .

the Silent Glow Storage Water Heater

HERE'S another Silent Glow—another addition to the great line that is making dealers prosperous in spite of the depression.

The Silent Glow Storage Water Heater, a fine summer seller, meets every requirement of quick and profitable selling—it's a real money maker.

It will furnish the average home with a plentiful supply of hot water at less than one cent per hour. There's a talking point in these days when everyone is thinking economy. Now for details:

The Silent Glow Storage Water Heater consists of a 25 gallon galvanized tank insulated with a two-inch rockwool covering, built into one integral unit with a regular Silent Glow vaporizing burner. The outer shell is attractively enameled in orange and black. The burner unit is hinged for convenience in lighting.

It's easy to operate, economical to use, and can be installed in almost no time at all—that's the sort of story you can tell your customers.

And from your point of view—all the skill and care of manufacture which have made Silent Glow famous in New England, the home of painstaking manufacturers, are evident in the Storage Water Heater—that means you can sell it confidently. It offers superlative value—that means you can sell it quickly.

It will do a real job—that means satisfied customers who'll advertise you by talking its merits.

And—it answers one of the greatest of summer housekeeping problems—hot water without trouble or expense, that means all the prospects you can possibly handle.

It's summer *now*. Better get in touch with us at once.

THE SILENT GLOW
OIL BURNER CORPORATION
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"Tackle the Big Men First for Automatic Heating"

An Interview with William Stafford of the Firm of Stafford Brothers, Elizabeth, N. J.

Reported by
A. R. OWEN

There is more good advice in this article than the headline suggests. Mr. Stafford dips into his experience in the sale of gas-fired heating systems and brings up a few gems of purest practical value, not only on the choice of the prospect, but on some of the peculiar kinks in the prospect's mind which must be overcome

SEVENTY-FIVE per cent of the gas-fired boiler installations made around Elizabeth, N. J., are handled by Stafford Brothers, plumbing and heating contractors of that city. In co-operation with the local gas company they go after this business aggressively.

William Stafford says: "The heating engineer should follow the line of least sales resistance on gas-fired boilers. Contact the big men first, the fellows who ride around in eight-cylinder limousines behind chauffeurs.

"At the present stage of gas-for-house-heating activity, the man of means is the best prospect and there are enough such people in every territory to supply substantial gas-fired boiler profits for some time to come. After you have contacted the big fellow in town, then go after the men of lesser means but don't be afraid to tackle the 'big shots' first. A few sales to them mean 'plus' sales to their friends and relatives because the big man likes to show off his possessions just like the ordinary man in the street.

"One of the first gas-fired boiler sales we made went to the editor of the leading

This is a ten-room house, heated by the gas boiler shown on the third page of this article

AUTOMATIC HEAT SECTION

A typical example of the type of basement modernization made possible by the introduction of any form of automatic heat. This particular home is heated by gas

local daily. Within a month we sold three more gas boilers as a direct result of this editor's efforts. We contacted the big bankers in town and sold a number of them at the start. In one case, a banker was so pleased with the gas boiler we installed in his home that he ordered a gas heating plant for his bank.

HOW TO HANDLE BIG PROSPECTS

"When contacting the big man regarding the gas-fired boiler he will often follow the same line of argument as the man of lesser means and contend that gas fuel is too expensive in comparison with coal. When a man of limited wealth offers this objection he has some grounds for it, because he sometimes cannot afford gas fuel, but when the wealthier citizen talks the high price of gas it is just a psychological quirk that can readily be dispelled. We have little trouble in overcoming objections to high gas rates when interviewing the local big men on gas-fired boilers. Our usual answer to such an objection is, 'You can buy a suit for $15 today but you do not buy such clothes just because they are cheap. You can ride around in a cheap car but you prefer your comfortable eight-cylinder limousine, which not only costs you five times more to acquire, but five times more to maintain. You can rent a shack in a back alley for a few dollars a month but you prefer the convenience and comfort of a nice home even though it sets you back considerably more. So why question the advisability of up-to-date heating equipment in your household just because it costs more to maintain? Its upkeep is no more unreasonable than the upkeep of the high priced car you drive.' In most cases this type appeal registers with the big man and we will sell a gas-fired boiler if the only objection is the price of gas fuel.

"In every territory there are many old families of wealth, and investigation will usually show that their homes are equipped with old hot-air furnaces, yet they will be using expensive limousines to travel the highways, and electric dishwasher sinks to wash their dishes. One home owner we finally sold was using an electric lawn mower on his lawn but heating his home with a furnace 30 years old. I remember another old family who resisted our suggestions to buy a gas boiler until I finally asked the elderly man of the house how old he was. When he said 60 years old I explained that three score and ten was the average span of life and asked him if he did not think he owed it to himself and his elderly wife to pass their declining years without worrying about ashes and coal dust. He was worth a few hundred thousand dollars. He could not spend it all before he died and he expected to spend most of his remaining years around the fireside, therefore, this type appeal closed the sale.

"This indicates that there are big automatic heat possibilities among men of means, whether they be young or old, and that the man of means may have everything up-to-date in his home except the heating plant. We have been selling gas boilers for five years and as yet have not run out of 'big men' prospects.

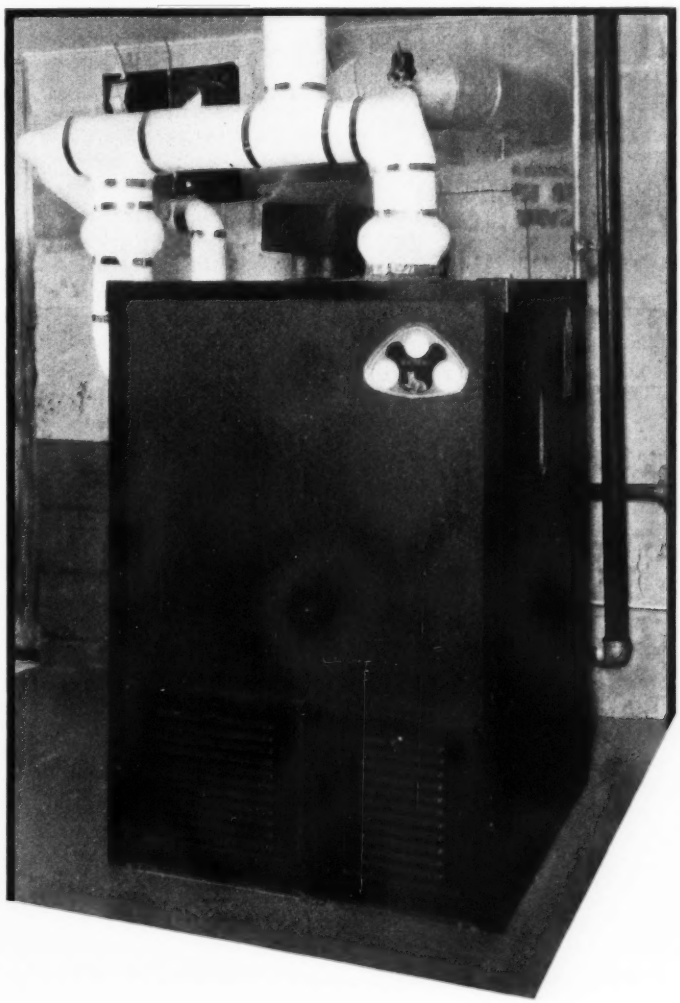
CHECK UP EXAGGERATED STATEMENTS

"One objection we often run up against is brought about through misinformation regarding the price of gas fuel. Such misinformation is spread by gas-for-house-heating users who wish to exaggerate what it costs them to maintain their equipment or by a few who must dispense with the convenience because they cannot afford it. These exaggerated statements do harm, and the heating contractor should acquaint prospects with the true facts. For example, one prospect informed me that a gas-fired boiler user of his acquaintance told him that he paid $90 monthly to heat his home with gas. This might have 'killed' my chances for making the sale except for the fact that I sold his friend that gas boiler and knew that the gas company had estimated only $375 for the entire heating season. Investigation proved that his friend had paid $90 for one month's gas fuel, but only for January the peak cold month of the year in this territory. When this was made known, I sold the prospect a gas boiler.

"When a prospect tells you that someone he knows pays a tremendous gas-for-house-heating bill, dig into the case and you will usually find that he is bragging about the peak-cold month of the year when such gas bills will run high but they taper off considerably during the milder months and it is really an inexpensive form of heat during the fall and spring months when it is but necessary to take the chill off the house to make it comfortable. Incidentally, we have had but one complaint regarding high gas rates for the entire heating season and this was from a customer who maintained a temperature of 80 degrees and opened the windows for a while every day to rejuvenate the atmosphere.

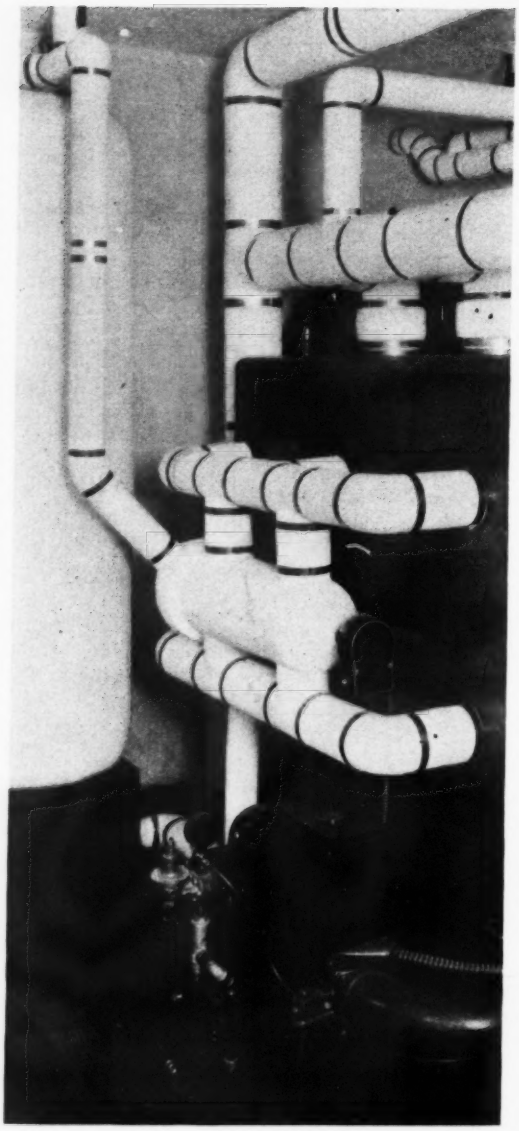
"The first gas boiler sale I made to myself and the second one to my father. It makes a favorable impression on a prospect if the seller states that he uses his own products in his own home. More than once prospects have asked me if I speak about gas fuel from experience. When I explain that I was my first customer and then go on to explain the advantages of gas fuel and maintenance costs, these prospects begin to take my selling appeals seriously. When I was heating my house with coal it cost me $175 yearly. Today gas fuel costs me $325 yearly. I have had bills in January as high as $80 but this does not mean that I spend $80 monthly to heat my home with gas, as some users like to make others think. Over the heating season from October to May gas fuel costs me less than $1.50 a day. It costs me more than that to run my car. I always bring along my own gas bills to assure the 'Doubting Thomas' regarding the actual cost of gas fuel.

This is the boiler that handles the ten-room house shown on page 69. It cost $300 to heat it from October to May, with a guaranteed temperature of 70 deg.



"The gas company in this city co-operates with the heating contractors to the nth degree. They do all the servicing, which takes a big load off the contractor's shoulders. Each week a man from the gas company visits each gas-fired boiler user and makes a thorough inspection. He adds water if necessary, makes other needed adjustments and even winds the clock on the thermostat so that the gas-fired boiler user in this town can forget his heating problem entirely. When a heating contractor can guarantee this type of service it usually registers."

AUTOMATIC HEAT SECTION



Oil Burner and

A reader asks a question. It is answered and commented on

By H. T. HALL

TO THE EDITOR:

How would you install an ordinary indirect water heater in connection with an oil burning house heating steam boiler to furnish ample hot water supply to the plumbing fixtures during the entire year?

Three possible answers are shown in Figs. 1, 2 and 3. However, the thought occurs to me that you must take into consideration the latent heat of vaporization that is present in the steam boiler when the boiler is making steam, but which is not present when steam is not being made. We have put in a number of these installations using an indirect heater 100 percent oversize, as suggested by Fig. 1, and a hot water control as suggested in Fig. 3, and find that, if the demand for hot water is fairly constant, the systems are not entirely satisfactory.

I think that Fig. 2 approaches the ideal connection of this kind, but do not think that the water temperature control with automatic switch and boiler feeder are essential on this connection. The oil-fired steam boiler will be equipped with a pressure control and, if the heating system is properly designed, can be set to close off at from 2 to 8 oz. It then only is necessary to close the valves in the steam main and return to change from winter to summer heating.

Massachusetts. T. A. T.

The hook-up illustrated in Fig. 1 shows an indirect heater installed below the water line of the steam boiler with a boiler thermostat set to maintain a temperature of 180 deg. Fahr. in the boiler water during the summer period. This is used in conjunction with a room thermostat and a boiler pressure control so that if the room goes over 70 deg. Fahr., or if the boiler steam pressure goes too high, the oil burner will be shut off; but when the boiler water temperature goes below 180 deg. Fahr., the oil burner is again thrown on, and thus always keeps the boiler hot during the summer period without actually producing any steam. The design of Fig. 2 employs a somewhat similar scheme except that valves are placed on the heating system supply and return so that these can be closed off in the summer and the boiler, when this occurs, is controlled from a thermostat located in the bottom of the hot water tank. This simply amounts to controlling the boiler oil burner from the room thermostat in the winter and from the tank thermostat in the summer with a boiler limit pressure control in service at all times. The design of Fig. 3 uses a room thermostat in parallel with a water thermostat inserted in the top of the indirect heater, both of these thermostats having to pass through the boiler pressure control, so that, if the steam pressure gets up to the allowable limit, the oil burner is shut down regardless of what either thermostat may be calling for.

The first point discussed by our correspondent is the matter of increasing the size of the indirect heater when utilizing such a heater for summer service. As all three of the figures contemplate an indirect heater installed below the water line of the boiler it follows that the only factor which affects the heating of water by the heater is the relative average differences in temperatures between the water in the boiler as it passes

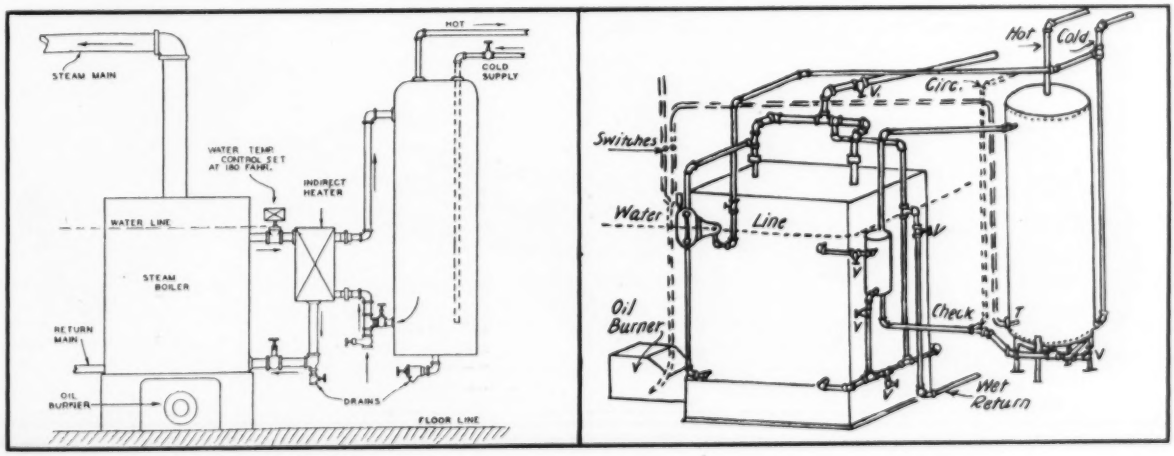
Indirect Heater Used for Summer Hot Water Supply

through the heater and the water from the hot water tank as it passes through the coil in the heater. For example: let the steam pressure during the winter be such as to give a boiler water temperature *at the top of the boiler near the water line* of 225 deg. Fahr., as this water near the water line passes into the top of the indirect heater and down through the heater the temperature falls as the heat is transferred to the colder water inside the coil. Let it be assumed that the boiler water, after passing through the indirect heater, goes back to the boiler, say, at 150 deg. Fahr., then the average temperature of the water is 150 plus (225 — 150)/2 or 188 deg. Fahr. The water from the hot water tank to be heated may be assumed in the winter to be as low, possibly, as 40 deg. Fahr., and if it is heated in the indirect heater to, say, 140 deg. Fahr., the average temperature of this water will be 40° plus (140° — 40°)/2 or 90 deg. Fahr. Then the average temperature difference between the boiler water and the water being heated during the winter will be approximately 188° — 90° or 98 deg. Fahr. In the summer the boiler water will enter at 180 deg. Fahr., and probably will return to the boiler around 120 deg. Fahr., making the average boiler water temperature 120° plus (180° — 120°)/2 or 150 deg. Fahr. But at the same time the street service water is warmer in the summer and the temperature of the water coming from the hot water tank may be 60 deg. Fahr., and it may be heated to 120 deg. Fahr. in the heater, making the average temperature of this water while passing through the heater of 60° plus (120° — 60°)/2 or 90 deg. Fahr. In this case in the summer the average temperature difference in the heater will be 150°—90° or 60 deg. Fahr. Then the coil surfaces in the heater must be increased approximately 98/60 or 1.63 times, provided that the same quantity of water is to be heated in both winter and summer. On the same basis, if the boiler water temperature were kept at 200 deg. Fahr., the increase in the heater capacity would be 1.4 times.

The drawing at the lower left is referred to as Fig. 1 and the one at the lower right is Fig. 2

As far as a greater quantity of hot water being used in the summer than in the winter we are somewhat in doubt of this; we never have seen any dependable test to show that this really is the case. More people are away in the summer; few care for extremely hot baths in very hot weather; there is liable to be less cooking and dishwashing on very hot days, etc., etc. Undoubtedly more baths are taken, but these are likely to be cold or tepid in place of hot; in fact, we never have known anyone in designing a hot water system, of even very large size, to make any extra allowance for summer load increase. In the idea illustrated in Fig. 2, where steam pressure may be carried on the boiler in summer the same as it is in winter, being prevented from entering the house system by valving off the steam and return main connecting to the radiators, it would not be necessary to increase the indirect heater at all since the boiler water temperature would be the same at all times. Outside of this particular arrangement it would seem advisable to about double the indirect heater capacity to care of the actual known loss of efficiency and to allow for contingencies.

Our correspondent next states that he feels that Fig. 2 approaches the ideal connection arrangement. Concerning this we would point out that this is a more expensive method to install on account of the valving necessary in the main lines and also that it is not as economical to operate under summer conditions owing to the higher temperature maintained in the boiler, resulting in an increased radiation loss from a comparatively



AUTOMATIC HEAT SECTION

large surface as well as the heat loss from the piping up to the point where the valve is located in the steam main. Fig. 1 indicates the most generally accepted method of hook-up. Our correspondent is right in thinking that Fig. 2 would result in less frequent operation of the

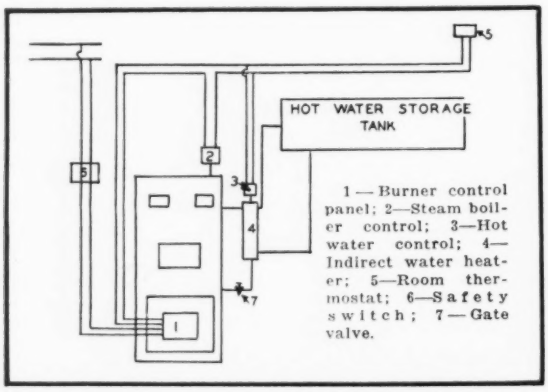

HOT WATER STORAGE TANK
1 — Burner control panel; 2—Steam boiler control; 3—Hot water control; 4—Indirect water heater; 5—Room thermostat; 6—Safety switch; 7—Gate valve.

Fig. 3—This shows a third suggested hook-up

controls. However, if the indirect heater is not increased—as is not necessary in this scheme—the heating up of the water would not be increased at all over any of the other schemes where the heater capacity is doubled, but 180 deg. Fahr. is held on the boiler water.

We can see weaknesses in the design of Fig. 2 consisting of the necessity of manipulating the valves every time we want to place the house thermostat in commission. On spring and fall days this might result in having to go down into the boiler room and to open or close these valves both night and morning as well as to throw off the tank thermostat or vice versa. In Fig. 3 this difficulty does not occur, as it is practically the same arrangement as Fig. 1, except that the boiler thermostat is placed in the top of the indirect heater.

Since these ideas have been submitted we have been wondering why the real answer is not to use two indirect heaters, with a valve, so that the circulation through one of these could be closed off in winter, but to allow both to go into service in the summer. It would seem that this would do away with all throttling and other schemes of reducing the indirect heater capacity during the winter, and, at the same time, give an adequate heater capacity during the summer.

In discussing this matter, however, our readers should not overlook the point that the latent heat in the steam has nothing whatever to do with the heating done in the indirect heater when installed above the water line. The things which control the transfer of heat through a plate —be the plate flat (such as occurs in steel boiler fireboxes) or bent round (such as occurs in boiler tubes and pipe coils)—are temperature difference, the mediums between which the transfer takes place, the rapidity of circulation, the material of the plate and the condition of the surface.

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Everything is in your favor *now* for the sale of gas heat to the homes in your community. Winter is over—House cleaning is on, but the distasteful features of coal heating are still fresh in memory.

Start now to call on the homes in your community. Point out that if they install Barber Burners *now* they are free from dirt, dust, ashes and the inconvenience of coal heat next fall.

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No. 330-B Barber Automatic Burner equipped with individual gas supply line to each burner unit and with motor valve.

How a Trouble Job was Solved

The faulty location of a room temperature control in connection with a stoker fired heating plant is described in this article.

By EARL BROWN

"We found the building to be a small compact five-room residence."

I SUPPOSE every one who has done any trouble hunting remembers one or two jobs more vividly than any others, probably because they had him guessing. I had such an experience as this a short time ago.

I received one morning a long distance call from a contractor friend in Rocky Ford, Iowa.

"When are you coming out this way again?" he asked.

"Not for some time," I replied, "because I just returned from your section of the state a few days ago. What's on your mind?"

"I'm having trouble on a small automatic heat job in which I installed a vapor system. I don't believe the system is at fault, but I do need some help."

"What seems to be the trouble?"

"I don't know, but something is radically wrong. The equipment keeps starting and stopping but the house doesn't heat up."

"It's a stoker job, isn't it? Where is the thermostat located?

"In the living room."

"Does the living room heat all right?"

"Yes, it seems to, but none of the rest of the house does. We have had mild weather this fall, so I don't know what will happen when the weather turns cold."

"What temperature does the thermometer on the thermostat register?"

"It shows about 69 deg. when the burner starts and 72 deg. when it stops. I tried raising the thermostat setting but that doesn't seem to help very much. The one who originally installed the stoker was on the job today and gave up."

"Are there any radiators near the thermostat?"

"Yes, there are two radiators in the living room, one of which is near the thermostat. I tried shutting off this near radiator but that didn't help much. Then I shut off both of them, with the result that it made the living room a little cool. It did seem to make the other rooms heat a little better, though, but even then they were far below what they should be."

"Do the living room radiators heat up?"

"All of the first floor radiators seem to heat part way. That is what made me think of shutting off the living room radiators. I thought that if I shut off the radiators in this room the equipment would run longer, but it seemed to make no difference."

"Well, that surely is a problem. Do the second floor radiators get heat?"

"They heat only a little at the supply end before the burner stops."

"Is the boiler clean?"

"Yes. I don't intend to be fooled by a dirty boiler after our last experience."

"I can't account for what is happening on this job. I'll have to think it over. If anything occurs to me that might be the cause of your trouble, I'll let you know."

"If you can help me, I'll surely appreciate it."

The following week I found it necessary to make a

AUTOMATIC HEAT SECTION

flying trip to a town only a few miles from Rocky Ford, so I stopped in to see my friend.

"I'm surely glad to see you. How did you happen to be here?" he said.

"Oh I had to be in Macon, so I thought I'd drop in to see that job you called about the other day. Have there been any further developments?"

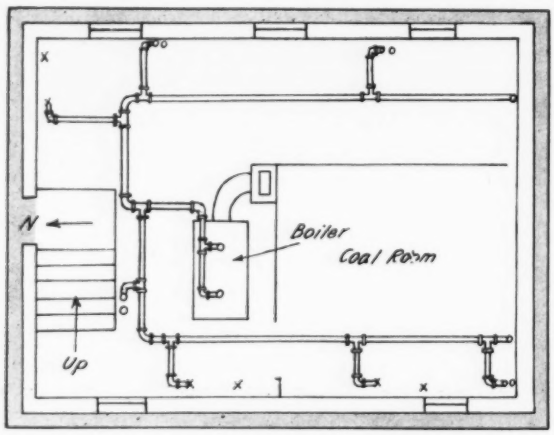


Fig. 1—This shows the basement piping lay-out

"Not many. The one who made the original stoker installation came back with a new thermostat the same day that I called you. He thought that in the case of this job the old one might be out of adjustment, but the new one isn't one bit better."

"What does the owner have to say?"

"I haven't seen him for several days but the last time I spoke to him he was all ready to tear out the whole system. I can't blame him but I don't know what to try next. Would you like to go out there now?"

"Yes, let's go."

We found the building to be a small compact five room residence with three rooms on the first floor and two rooms on the second as shown in the accompanying sketch. The first floor rooms were all connected by doors which were kept open, and the stairway was closed, all of which made the building appear to be an easy one to heat.

The thermostat was located on the interior partition between the living room and stairway, as shown in the first floor plan. When we first looked at it the thermostat showed 70 deg. Fahr. In a few minutes it dropped to 69 deg. Fahr. and the equipment started. In three or four minutes the thermostat went up to 72 deg. Fahr., and the equipment stopped. At the same time the first floor radiators had heated only a little before the equipment stopped, as my friend had told me they did. In about five minutes the equipment started again. This was certainly an extraordinary way for the job to act, but I could see nothing to account for this performance.

We went down into the basement and found the piping arranged approximately as shown in the basement plan.

"Would it help matters," my friend asked, "if I installed orifices?"

"No, I don't believe it would. You have balanced the piping so nicely and the building is so compact that if this job ever behaves it should heat evenly."

"I'm relieved to hear you say that. Some of my men seem to think that the orifices might help considerably, but I doubted it. Have you anything to suggest?"

"Suppose you disconnect the thermostat and let the equipment run for half an hour. Then we'll see if the job will work if it is given a chance."

We did this and, much to my friend's amazement, every radiator was piping hot within fifteen minutes and the thermometer on the thermostat registered 76 deg. Fahr. When we reconnected the thermostat the equipment did not start until the temperature dropped to 69 deg. Fahr. and then the job acted just as before.

It seemed to me that this was definite proof that there must be something wrong with the thermostat or its location. While I was considering this question I was leaning against the wall with my hand just below the thermostat. When the equipment started again, before I realized what was happening, my hand became warm. In a few minutes the equipment stopped.

This would certainly require investigation I thought, and started to look for the cause of this heat. Quite carefully I noted the location of the thermostat and went down to the basement to see what I could find. As I suspected, there was a set of supply and return risers going up the interior partition between the living room and stairway. The thermostat had been located directly in front of these risers!

"Well, here's the cause of your trouble."

"What on earth is wrong there?" he said.

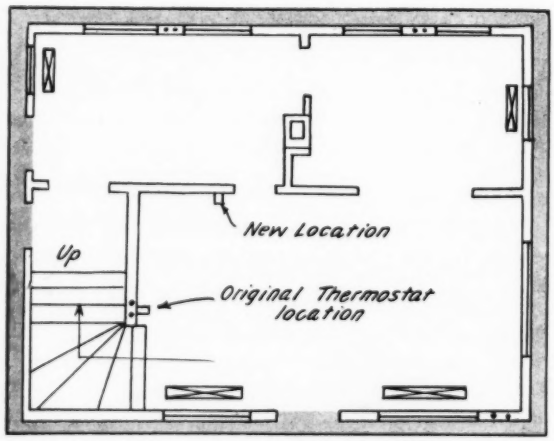
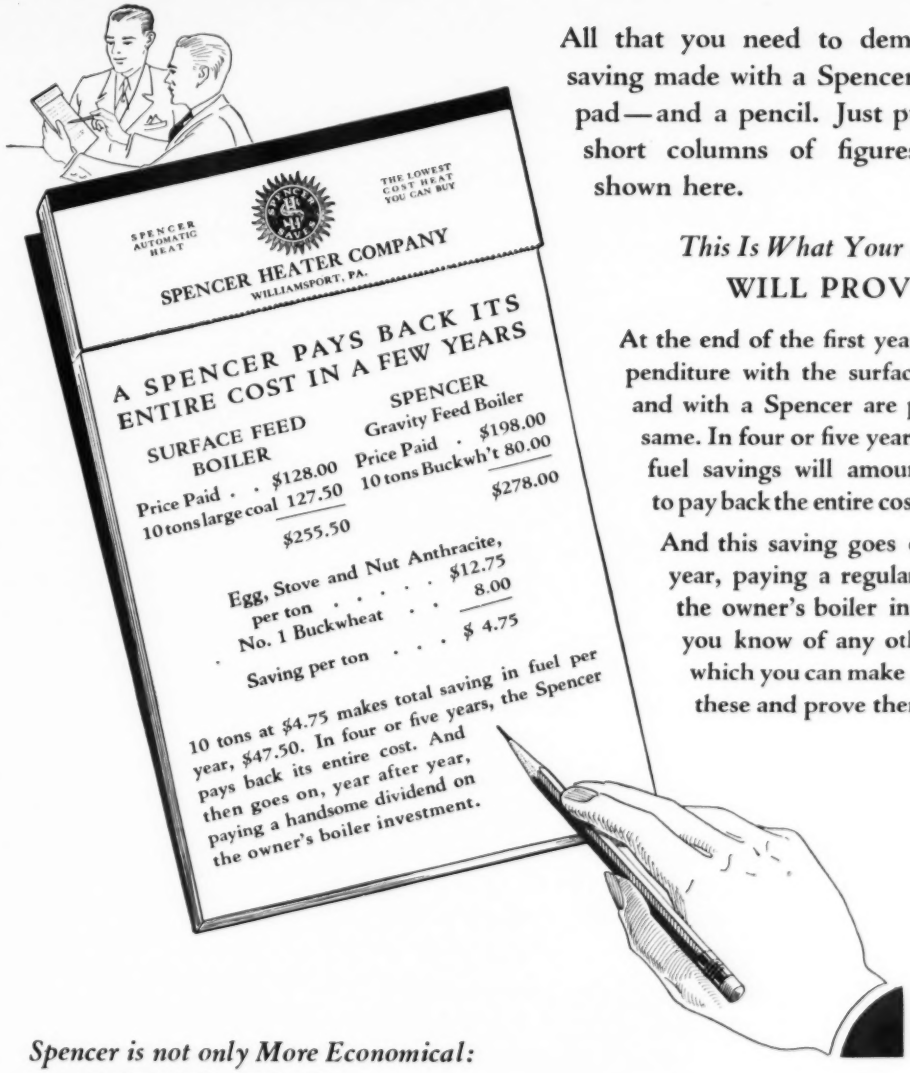


Fig. 2—Here is the first floor plan with the old and new temperature control locations

"The one who made the original stoker installation placed the thermostat right in front of thes risers," I said. "As soon as the equipment starts the risers heat up first because they are the shortest distance from the heating boiler. Then they heat the thermostat immediately and cause it to stop the equipment before the radiators have a chance to heat."

We immediately called the one who was responsible for the work. When he relocated the thermostat as shown on the first floor plan the job worked perfectly and every one was pleased.

How Successful Heating Contractors Sell Boilers with a Scratch Pad and Pencil!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A SPENCER PAYS BACK ITS ENTIRE COST IN A FEW YEARS
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No. 1 Buckwheat . . 8.00
Saving per ton . . . $ 4.75
10 tons at $4.75 makes total saving in fuel per year, $47.50. In four or five years, the Spencer pays back its entire cost. And then goes on, year after year, paying a handsome dividend on the owner's boiler investment.

All that you need to demonstrate the saving made with a Spencer is a scratch pad—and a pencil. Just put down two short columns of figures like those shown here.

This Is What Your Figures
WILL PROVE:

At the end of the first year, the total expenditure with the surface feed boiler and with a Spencer are practically the same. In four or five years, the Spencer fuel savings will amount to enough to pay back the entire cost of the boiler.

And this saving goes on, year after year, paying a regular dividend on the owner's boiler investment. Do you know of any other boiler for which you can make such claims as these and prove them?

Spencer is not only More Economical:
it is BETTER HEAT

At the same time that a Spencer Boiler is paying back its own cost—and a dividend—it is also supplying even, uniform heat that is the result of the uniform fire bed, found only in a Spencer; and it is supplying modern, Automatic Heat, that requires attention only once a day. How can the owner of an old-fashioned, worn-out boiler, resist this combination of advantages? Talk these Spencer features to some person every day, and you can't help but sell boilers—and make money!

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HAS GOOD REASON TO BE PROUD

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EVERY home owner whose oil burner is equipped with a G-E motor has special reason to "point with pride" to an installation perfectly powered.

World-wide acceptance of G-E equipment . . . radios, refrigerators, washing-machines, etc., . . . is a powerful sales ally for you. G-E sales and service are always near at hand. G-E engineers are always ready to be of help. And G-E fractional-horsepower motors are designed and built to match the performance characteristics of any home oil burner.

Investigate G-E motors; whether you use standard or highly special drives, G-E application engineers can help solve your drive problems to the complete satisfaction of yourself, your dealers, and their customers.

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GENERAL ELECTRIC

TRADE

NEWS OF PLUMBING AND HEATING CONTRACTORS

Chicago Plumbers' Association Celebrates 50th Anniversary with Big Party

A large crowd, representing all three branches of the plumbing and heating industry, gathered in the gold room of the Congress hotel, Chicago, on the evening of May 14 to participate in the fiftieth anniversary celebration of the Plumbing Contractors' Association of Chicago. It was one of the most successful social affairs in

Henry Swade, president of Chicago association, and Charles E. Gawne, vice president

the history of the trade in Chicago. A delicious dinner was served, followed with short talks by prominent leaders in the industry, and by entertainment and dancing.

P. W. Donoghue of Boston, Mass., president of the National Association of Master Plumbers, made a special trip to Chicago to extend the congratulations of the national organization. Another national officer, E. B. Kleine of Cincinnati, Ohio, vice president, was also present; John J. Vogelpohl, also of Cincinnati, chairman of the national scholarship committee and a past national president, was another prominent guest. Henry P. Reger of Chicago, president of the Illinois Master Plumbers' Association; Henry Swade, president of the Chicago association, and William E. Clow, Sr., president of James B. Clow & Sons, Chicago, were others who were included on the speakers' program. Joseph W. Cannon, past national president and president of the Chicago association for a number of terms in the past, acted as toastmaster.

In addition to those mentioned above, guests were present from many of the smaller communities surrounding Chicago, including a delegation from Milwaukee, Wis.

An attractive souvenir program was given each person. The booklet contained an interesting historical sketch of the Chicago association, from its founding in 1882, up to the present time. Included also were photographs of all the past presidents of the association.

The success of the affair was due largely to the efforts of the following, who constituted the arrangement committee: William J. Lang, chairman; Charles A. Dreier, Joseph W. Cannon, William Redieske, James W. Fettes, Rupert J. Weber, John J. Calnan, Charles Gawne, Henry Swade and Peter M. Munn.

The reception committee was composed of the following: Charles J. Herbert, chairman; George J. Feldkamp, Ray Ferguson, Robert E. Murphy, W. A. Brown, Henry O. Callaghan, Ed. W. Kaiser, George H. Matthews, Henry J. Becher, W. A. Bunge, J. J. Daly, John J. Delehant, Thomas E. Duffy, C. J. Erickson, E. C. Wagner, Thomas F. Hanley, Sr., W. F. Knauss, G. A. Larson, Charles S. McKay, Andrew Nilson, Ed. O'Connor, Walter C. Shaw, J. Lloyd Walsh, T. E. Whitchurch, Fred W. Sorge, Robert Nelson, A. W. Bahn, A. D. Weinberg, Paul Grosse, L. A. Goldacker, Michael Mele, Thomas F. Hanley, Jr., Charles J. Stanley, T. W. Merryman, John A. Corboy, William Gawne, William P. Arnold, John Blair, T. I. Magan, Leo. Corboy, John T. Dorsey, William S. Eadie, C. D. Harris, Charles Watson, Paul Jacoby, Frank Kveton, Stanley J. Loula, Harry M. Nacey, Charles Thumm, James I. Riordan, W. J. Sievert, John G. Zajicek, Marcus Weil, L. P. Markowski, B. J. Farwell, R. E. Webster, A. J. Racine, Charles Burmeister and E. A. Mortimer.

Plans Completed for Virginia Convention

Plans have been completed by the officers and committees in charge for the ninth annual convention of the Virginia Associated Plumbing and Heating Contractors. The meeting will be held at Alexandria on June 2 and 3, with headquarters at the George Mason hotel. The president of the organization is E. G. Harris of Richmond.

Gas Group to Spend $6,000,000 on Advertising

Plans for a national advertising and promotional campaign to stimulate the use of gas and gas burning appliances. involving the expenditure of approximately $6.-000,000 in excess of current advertising expenditures, have been announced by John A. Frey of Detroit, chairman of the national advertising committee of the manufacturers' section of the American Gas Association. The campaign is to be started this summer.

Milwaukee Contractors Support Move to Relieve Unemployment

Milwaukee Master Plumbers' Association and the Heating and Piping Contractors', Milwaukee Association, are actively supporting the local house-to-house drive to relieve unemployment. Bulletins informing housewifes of the plans are being distributed. Then members of the various associations cooperating will call at the homes to find out what repairs or possible work is needed in that particular home. The housewife is asked to specify on the card, if possible, the firm whom she has previously had to do her plumbing, heating or any other type of work that may be needed.

All cards, for instance, which do not specify a particular plumber, will be sent to the Milwaukee Master Plumbers' Association offices and members of the association will get the benefit of the jobs available.

Denver Association Elects Officers

At the annual election of officers of the Denver Master Plumbers Association, held recently, only two changes were made in the official personnel. President A. J. Adshade and Vice President Robert Demmer were re-elected. J. P. Brickey was elected treasurer, succeeding H. W. McGee, who had held the office for a number of years. C. H. Vogel was elected sergeant-at-arms. The secretary will be appointed later.

Atlanta Masters Elect Officers

J. W. Picklesimer was elected president of the Atlanta (Ga.) Association of Master Plumbers and Heating Contractors at the recent annual meeting of the organization. He has served as president of the association since last fall, when he was elected to fill the unexpired term of P. Lee Guest.

The other officers are: D. T. Beggs, vice president; A. F. McDonald, corresponding secretary; W. Reid Puckett, executive secretary; and J. H. Nunan, J. G. Flournoy and W. S. Loftis, directors.

Milwaukee Masters Start Sales School

The Milwaukee Master Plumbers' Association has endorsed the formation of a special sales class for its membership, to be held at association offices in the Builders' Exchange once a week for ten weeks. The purpose of the course is to better equip the local membership for a more progressive personal and merchandising service, according to Peter King, executive secretary of the organization.

The course, which opened on May 12, will be under the direction of W. W. Goodrich, sales engineer, a Milwaukee man who specializes in the training of sales groups.

Refrigerating Engineers to Meet in Cambridge, Mass.

A technical program of unusual interest and a splendid entertainment program have been arranged for the 19th Spring meeting of the American Society of Refrigerating Engineers, which will be held in Cambridge, Mass., June 9, 10 and 11. Headquarters will be at the Massachusetts Institute of Technology.

A. L. Stevenson, Jr., of the General Electric Co., Schenectady, N. Y., is chairman of the program committee arranging the technical sessions, and the entertainment has been planned by members of the Boston section of the society, with Everett L. Ryan in charge.

Among the subjects on the program are: "Steam Ejector for Large Capacities," by D. K. Dean, Foster-Wheeler Co.; "Review of Heat Transmission Developments," by W. J. King, General Electric Co.; "Solid CO_2 Refrigeration Control," by J. G. Bergdoll and A. W. Ruff, York Ice Machinery Corp.

Warren, Ohio, Association Elects Officers

The Master Plumbers' Association of Warren, Ohio, at its annual meeting on April 11, elected Harry C. Williams to serve as president of the organization during the ensuing year. The other officers elected at the same time are: Harry S. Smith, vice president; George W. Angstadt, secretary; and G. F. Thompson, treasurer.

Southern California Chapter Holds Interesting Meeting

Largest attendance in the history of the chapter was occasioned with the staging of the April meeting of the Southern California chapter of the American Society of Heating and Ventilating Engineers at the California Institute of Technology, Pasadena. Two hundred fifty members and guests were present.

Interest of the meeting centered in talks and demonstrations by Dr. Arthur L. Klein, assistant professor of aeronautics, and Raymond W. Ager, teaching fellow of electrical engineering, both of the Institute. Dr. Klein operated and explained the Institute's famous aeronautics wind tunnel. After the general demonstration a number of members particularly interested in aeronautics stayed until midnight while Dr. Klein discussed the more technical phases of wind tunnels and their relation to aeronautics. Members also prevailed upon Dr. Klein to explain Dr. Anderson's cosmic ray machine, from which was discovered the new ray about which there is so much discussion. Mr. Ager explained the operation of the

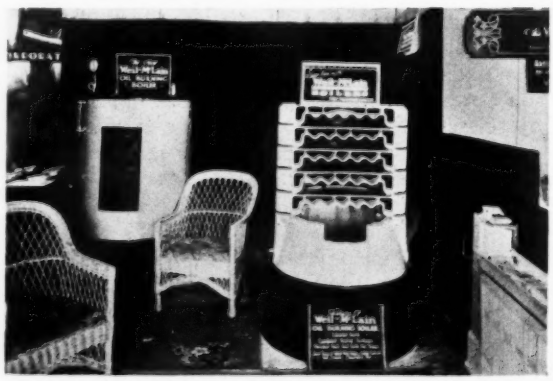
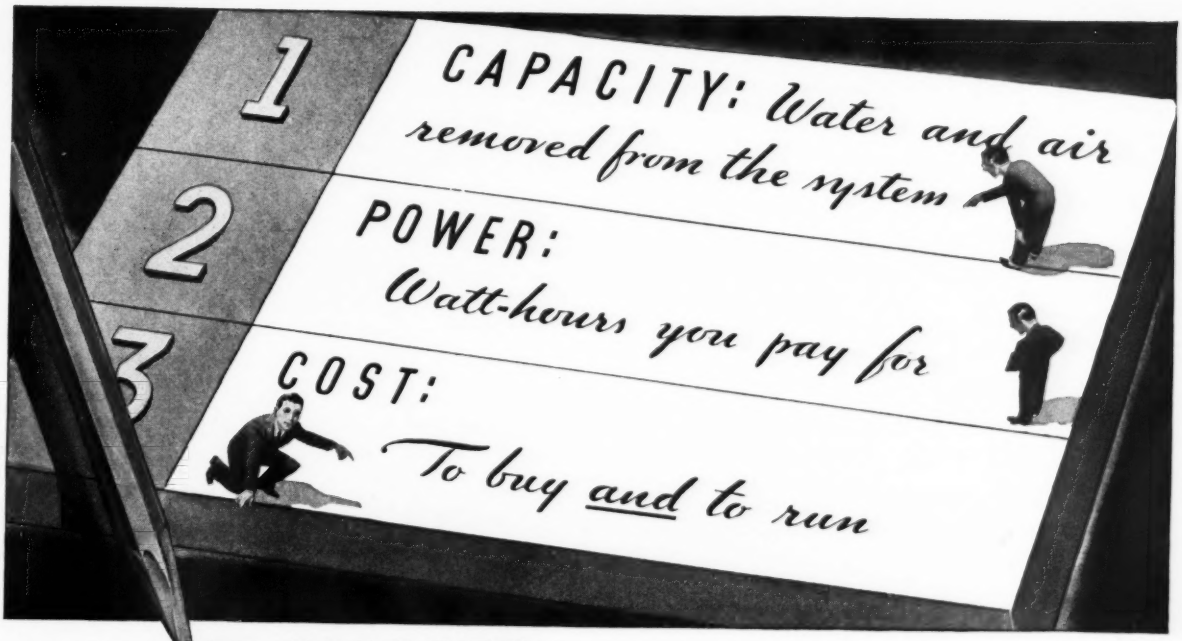


Exhibit of Weil-McLain Co., Michigan City, Ind., at the annual convention of the American Oil Burner Association, held recently at Boston, Mass.



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Take capacity as a basis. Because Jennings design provides greater air and water capacities, you buy more actual pumping when you purchase a Jennings Pump.

Considering operating costs alone, there can be no other choice. Driven by smaller motors, having extra capacity to remove air and condensation rapidly, Jennings Pumps consume less power; are good for a lifetime of trouble-free service.

Or, if you specify heating pumps by ratings in square feet of radiation, remember this! Such ratings are reliable only when water and air capacity for a given power consumption over a given period of time are also known.

On this basis, you can always install a Jennings Pump at a lower initial investment to handle any given amount of radiation.

NASH ENGINEERING COMPANY, 41 WILSON ROAD, SOUTH NORWALK, CONN.

Jennings Pumps

Institute's one million volt transmission equipment and put on an elaborate electrical show.

The program, arranged for by L. H. Polderman, Carrier Engineering Corp., program committee chairman, was, in the general opinion of those present, the most interesting ever held by the chapter.

New Officers Elected by Michigan Chapter

New officers were elected at the May meeting of the Michigan Chapter of the American Society of Heating and Ventilating Engineers, as follows: L. L. McConachie, president; H. E. Paetz, vice president; E. H. Clark, treasurer; G. D. Winans, secretary; and A. C. Wallich, J. W. Snyder and R. K. Milward, governors.

The afternoon was spent at golf and baseball at the Meadowbrook Golf and Country club. Golf prizes were distributed to the following: Messrs. Anderson, Sherrif, Trosky, Hull, Winans and Wallich.

Other prizes were awarded to Messrs. Dellis, Arnoldy, Fisher, Deppman, Trinkhouse, Brown, McConachie, Robinson, Nelson, Sterner, Smith, Sheely, McFait, Billel, Nannen, Walton, Glanz and Rowe.

St. Louis Chapter Completes Heating and Ventilating Code

That a heating and ventilating code has been prepared by his committee and turned over to the Associated Engineering Society was brought out in the report of L. Walter Moon, chairman of the code committee, at the May meeting of the St. Louis Chapter of the American Society of Heating and Ventilating Engineers.

Professor A. S. Langsdorf, dean of the school of engineering, Washington University, addressed the meeting on the subject of "dust counting." He described the various methods used in securing data on dust counting, as well as on soot fall.

It was decided that the June meeting be set aside as the annual outing, to be held at the Meadowbrook Country club.

California Inspectors Draft Model Plumbing Code

Further progress in creation of a model plumbing code for use of California communities was made at a recent joint meeting of the executive committees of the northern and southern divisions of the Plumbing Inspectors Association of California.

This regulation spring meeting of the committees was staged at San Luis Obispo on the invitation of Mayor L. F. Sinsheimer, whose city, now without a plumbing code, is considering adoption of the association's effort when it is completed. The code is expected to take final form after discussion at the group's annual convention, called for October 7, 8 and 9 at Bakersfield.

In addition to drafting the code under the direction of President Gay R. Hilliker of Fresno, the inspectors listened to "Actual Experiments in Problems of Cross Connections," reviewed by Jean L. Vincenz, public works commissioner of the City of Fresno.

Plumbing inspectors in attendance were W. R. Bills, Alhambra; L. M. Hendsch, Bakersfield; George Grimshaw, Berkeley; Gay R. Hilliker, Fresno; Joseph T. Curley, Long Beach; Charles B. Bailey and Stephen I. Smoot, Los Angeles; Charles Everett, Lompoc; J. B. Davis, Pasadena; J. M. M. Winkler, Pomona; C. S. Ford, Richmond; Fred N. Johnson and Lester Keaton, San Jose; H. A. Johnson, Ventura. Hosts and guests were L. F. Sinsheimer, mayor; L. W. Moore, city engineer; E. M. Payne and G. C. Johnson, master plumbers, San Luis Obispo; Jean L. Vincenz, public works commissioner, Fresno; Oliver Fender of the Plumbers Examining Board and Norman W. Kelch of the Clay Products Institute of California, Los Angeles; Andrew Jenson and Axel Allen of the Clay Products Institute of California, San Francisco.

Bureau Staff Members and National Directors Assist at State Conventions

Traveling 6,500 miles and addressing meetings of master plumbers in four southwestern states, Joseph G. Hildebrand, secretary-manager of the Plumbing and Heating Industries Bureau, has returned to bureau headquarters in Chicago.

Mr. Hildebrand spoke before the annual convention of the Associated Master Plumbers of Texas, at San Antonio, the annual convention of the Louisiana-Mississippi Association, at Mandeville, La., and the annual convention of the Colorado Society of Sanitary and Heating Engineers, at Denver.

Joseph G. Hildebrand, secretary manager of the Plumbing and Heating Industries Bureau, and R. G. Thomas of San Antonio, Tex., national director, at the recent convention of the Colorado Society of Sanitary Engineers

H. O. Green, of Tulsa, Okla., treasurer of the National association, attended the Louisiana-Mississippi convention and R. G. Thomas of San Antonio, national director, attended the Texas and Colorado conventions. Rupert J. Weber of Chicago, national director, also attended the Louisiana-Mississippi convention.

Following the Colorado convention, Mr. Thomas and Mr. Hildebrand visited Colorado Springs, Colo., and

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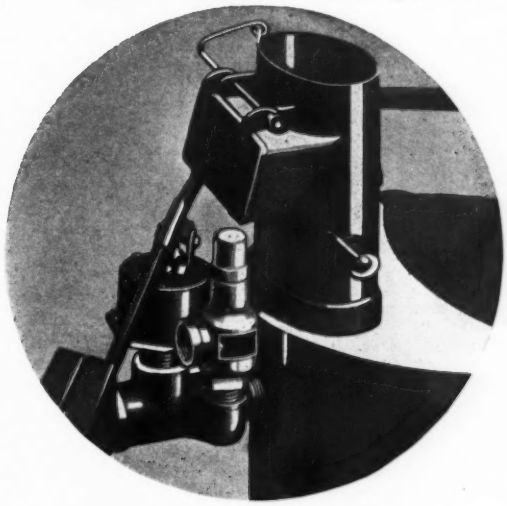

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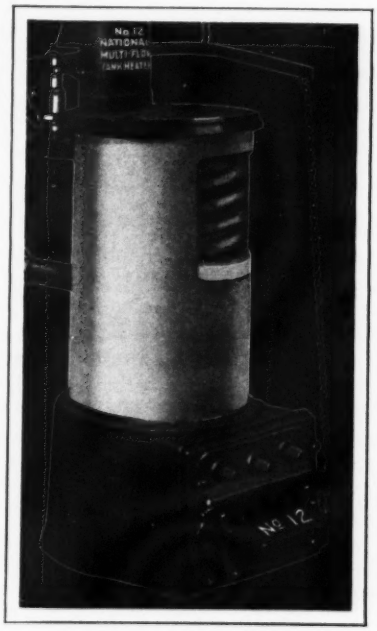

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Heater and installation make you a good profit. Made in three sizes. Write for information.

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150° Hot Water 24 HOURS PER DAY

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. . . guess we will have to
LOWER THE ANTE

We said that *if price alone counted* we could furnish traps for 89c. News comes that in one building traps recently went for 96c—so we will have to lower the ante. But, again, you won't get a trap like the one above. *That* is a Barnes & Jones trap and is made to go in and *stay*. That's real economy, think it over.

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Albuquerque, N. Mex., and addressed meetings of contractors in these two cities. At the meeting in Albuquerque, the Albuquerque Association of Master Plumbers was organized.

Norman J. Radder, publicity director of the Bureau, spoke on Bureau services and activities at the forty-eighth annual convention of the Missouri State Association of Master Plumbers, at Kansas City, and the thirtieth annual convention of Oklahoma State Association of Master Plumbers, at Enid.

In speaking on the value of the Bureau's bookkeeping and cost accounting system, Mr. Radder cited the experiences of a Michigan plumbing contractor who brought suit to collect for a plumbing installation and won his suit because he was able to produce in court the job records which proved that his charges were justified.

"The customer offered to settle for $700, but the contractor asked $1,150," Mr. Radder said. "He got $1,150, or $450 more than the customer offered to settle for, because he was able to prove his costs were right."

Milwaukee Selects National Convention Delegates

The Milwaukee Master Plumbers' Association has chosen the following delegates for the national convention, to be held June 21 to 23, inclusive, at New York City: Henry C. Weber, Jacob Schuh, Walter W. Dusold, Charles Pelunek, Joseph Wittig, Lewis R. Friend, Peter Vogt, Walter Tesch, Otto A. Waskow, A. J. Maag, F. C. Kuetemeyer, F. Schwantes, Jacob Belz and A. F. Boettcher.

Alternates include: Louis Schmitt, Herman Zien, Erwin Knauer, Michael Mueller, Michael O'Leary, Frank Loppnow and Rudolph Wenniger.

John Schmitz

John Schmitz, master plumber of Denver, Colo., died at his home, 2543 Yates street, on May 8. Mr. Schmitz came to Denver from Chicago in 1887 and started to learn the plumbing trade in the shop of H. E. Kennedy. After finishing his apprenticeship he was employed by W. T. Crean, successor to the Kennedy Plumbing Co., for about 15 years. In 1908 he and W. H. Buckley bought out Mr. Crean and started in business for themselves. He continued in active business until October, 1929, when ill health caused him to retire and sell his interest to Mr. Buckley. Mr. Schmitz was in his 69th year at the time of his death. He was well known in Denver as the last oldtimer to use a bicycle as a means of transportation to and from jobs. He had been a member of the Denver M. P. Association for many years.

Dr. C. Hampson Jones

Doctor C. Hampson Jones, commissioner of health of Baltimore, Md., died recently in that city. He took an active interest in sanitation and plumbing, and due to his efforts and recommendations Baltimore installed a modern sewerage and water system, which was immediately reflected by the steady decrease of the typhoid death rate from 38.2 per thousand in 1898 to 7.7 per thousand in 1931. He was a member of the State Board of Plumbing Examiners.

Illustration shows the "Premier" insulated automatic storage gas water heater, distributed nationally by the Crane Company. "Premier" heaters are available with seamless drawn Everdur tanks.

At moderate prices *now* . . . Water Heaters equipped with rust-proof tanks

AUTOMATIC water heaters with rust-proof tanks are now available at prices undreamed of a few years ago. The public is willing to pay for a superior product when its advantages are appreciated. You can get a greater share of this profitable business by pushing heaters with rust-proof tanks. Remember that not one or two, but 12 leading heater manufacturers now furnish their equipment with tanks of Copper or Everdur.

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Everdur, 96% Copper alloyed with silicon and manganese, is a newer Anaconda metal recently adapted for tanks by a number of leading manufacturers. This Copper alloy combines the corrosion resistance of pure Copper with the strength of steel. The ease with which it is welded makes Everdur the ideal metal for rust-proof tanks of welded construction. Further information and list of storage heater manufacturers using Anaconda Copper or Everdur on request.

Anaconda Brass Pipe

A storage tank of Copper or Everdur, connected with Anaconda Brass Pipe, provides a completely rust-proofed hot water system. Public knowledge of such a system's many advantages will stimulate sales of rust-proof tanks and continue to increase the use of Brass Pipe.

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It always takes a Rooster to tell a hen how to lay an egg.

"It seems like there's plenty of instructions available on how to finance, how to buy and how to merchandise but where does a man learn how to become a good contractor," says Old Bill Wise.

"Every successful builder, architect, and contractor knows that the real success of the job depends upon some strange quality that some contractors seem to have; and some don't. It is the important and unusual ability to plan, to organize and to coordinate harmoniously, intelligently and effectively the three important elements of men, materials and time on the job.

"When a plumbing and heating contractor has this ability, he's got the 'its' that makes for success. He has what it takes to get contracts at even higher figures than his competitors.

"It seems like all the folks who write books and other kinds of instructions have overlooked this all-important subject. A contractor is just supposed to be born with 'it'; or born without 'it'. It's one of the things that a successful contractor seems to teach himself out of his own experience.

"It's to the everlasting credit of the many successful plumbing and heating contractors that they are doing such a good job in this respect when so much pressure is being placed on other more incidental things. Seems like it always takes a rooster to tell a hen how to lay an egg," says Old Bill Wise.

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The "PROFIT IN THE MAKE UP" *Line*

Readers Discuss a Half Century of Plumbing Progress

(Continued from page 36)

the atmospheric pressure in the interior of the piping and the exterior of the piping is about the same. When the water starts to fall in the vertical lines through the plumbing system, it carries some of the air ahead of it. The air tries to get up to the top of the system while the water is falling to the bottom. Although the air splits the water up into small particles, still the water being heavier than the air, compresses the air and drives it down to the first bend that takes a horizontal direction.

The air at that point makes an effort to get to the top, and a great deal of it gets to the top, but a considerable amount is forced into the main drain. If that main drain were tapped on the top at several points by taking out the branches at the top, those of the branches that were not in use at that particular time or were not in full use would act as reliefs for that main drain, and take the air up and out through the roof. This would be so, especially in well designed systems. If that air remains in the main drain, it seriously retards the flow of water and the water travels along in a jerky, hesitating manner, due to the fact that the air is fighting its way out at the top of the plumbing system. In cities where they use a house trap and fresh air inlet, this air is forced out through the fresh air inlet. Where there is no house trap, this air is forced into the sewer.

PLUMBERS RAISE STANDARD

I believe that much better results in general would be obtained by balancing the air in piping systems, by removing excessive air and by supplying air where air is deficient. There is no doubt in my mind but that the plumbers of the country have brought plumbing up to its present high standard by hard work and intelligence. I believe that they should get behind the best system known at the present time and I think that the pipe that conveys air and that does not convey liquids is the better system to use. I do not believe in the double duty pipe, because I do know from experience that the diameter of that pipe will change and that after a time it will get to be a one duty pipe. The initial cost of loop venting and individual venting are about the same, and I do not know why we do not adopt the better system.

In long loops or legs of loop systems, advocates of this system say that it should be vented at two or three different points. This would be more expensive than individual venting. Therefore, I believe the industry should get behind the better system and I believe you will agree with me that the system where the diameter of the vent pipe does not change is a very much better system than one where the diameter of the pipe changes.

Plumbing should be looked on as a health measure, and, in my personal opinion, should be under the supervision of the Board of Health in all cities, towns and villages. I know that the American public appreciate what the plumbers of this country have done for them.

New York City. J. L. Murphy.

Fifty National Conventions—the Record of George F. Uber

FOUNDER of the Philadelphia Association of Master Plumbers, delegate to the first convention of the National Association of Master Plumbers when it met at the old Masonic Temple in New York City to lay down the principles which have guided it through 50 years of industrial change, one of the two men still living who attended that first meeting, the only man who has, through 50 years never missed a national convention, whether it was held in his home city or in San Francisco, always a stalwart in the organization, his pocketbook and his time at the service of his brother masters of the country whenever the common cause might be served.—These facts are but a brief outline of the record of George F. Uber of Philadelphia, who will attend his fiftieth convention when the national association meets in New York City at Madison Square Garden to celebrate its golden anniversary.

George F. Uber

And when that gathering convenes, George F. Uber will be as certain of the worthiness of his association's cause, and as confirmed in his belief in his association's principles and value as he was in 1882 when Colonel George D. Scott and T. J. Byrne broached to him the idea of a national organization of master plumbers.

Mr. Uber will have a lot of things to remember when he attends his golden anniversary convention. But his interests will be in 1932. A man's as old as he feels; and George F. Uber, still keeping his hand in at his own business at 13th and Fairmount avenue in Philadelphia, is not at all troubled by that old feeling. It was only a year or so back that he won a foot race from a field 20 years his junior at a Philadelphia association picnic.

A firm belief that the common interests which hold men of the same business together are stronger than the personal interests which tear them apart was what started Mr. Uber in association activity. This is how he describes it:

"Early in the winter of 1882, Colonel George D. Scott and T. J. Byrne came down from New York City to see if an association couldn't be started in Philadelphia. They called on several Philadelphia master plumbers, all of whom were discouraging in their attitude toward the association idea. It had been tried before, they said, and it always wound up in a fight. One of the most discouraging talkers of them all was A. M. Hicks, my one-time apprentice boss.

"I seemed to be the only one in Philadelphia who was willing to get out and try to build an association. I was a young fellow, and the fact that it had been tried be-

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The greater efficiency of Dorward-Red Jacket Water Systems results from the advanced engineering embodied in the new rotary principle of the power head. Straight line motion is developed within the head itself without the use of walking beams, connecting rods or other oscillating parts. All moving parts are enclosed, run in baths of oil, and move in complete cycles—minimizing friction, noise and destructive vibration. Greater capacity for power used, long life, and negligible service are the results . . . With capacities of 200 to 10,700 gals. per hour, Dorward-Red Jacket Rotary Power Heads and Water Systems are ideal for Farms, Country Homes, Tourist Camps, Residences, Summer Resorts, Schools, Hotels and Municipalities.

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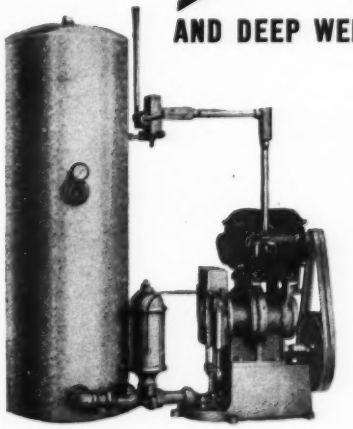

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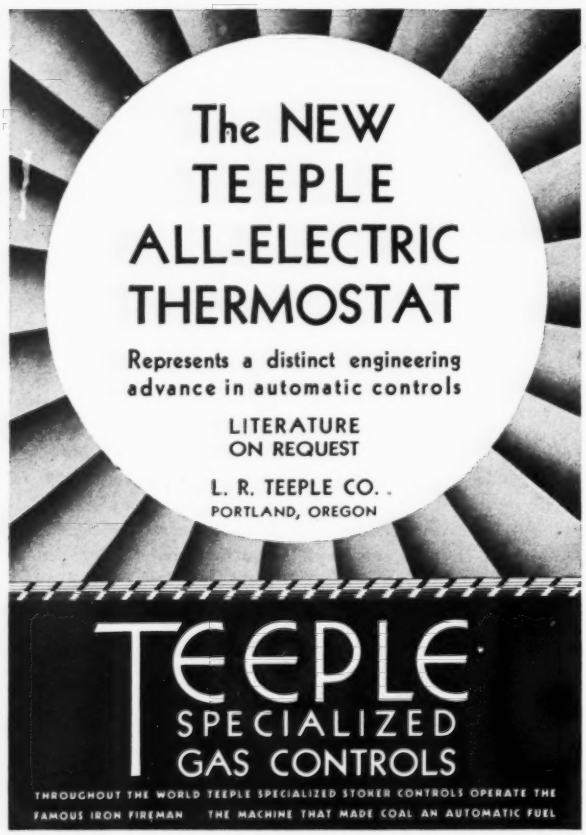

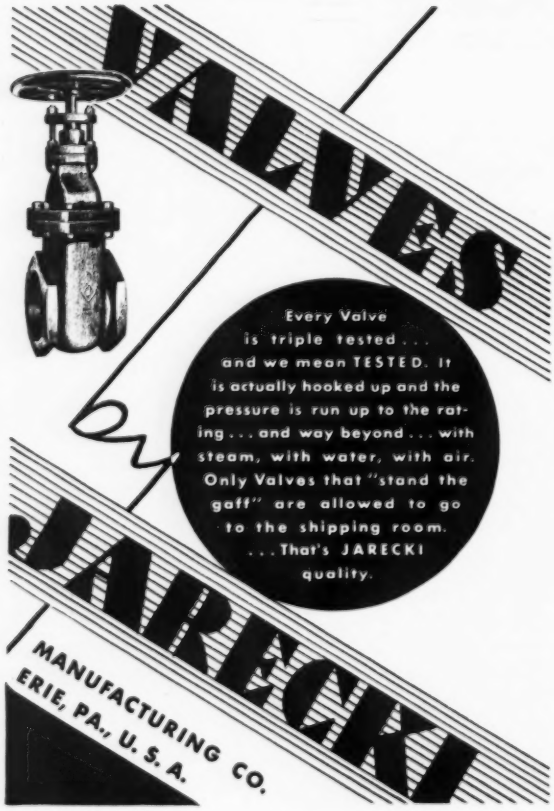
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JARECKI
Every Valve is triple tested . . . and we mean TESTED. It is actually hooked up and the pressure is run up to the rating . . . and way beyond . . . with steam, with water, with air. Only Valves that "stand the gaff" are allowed to go to the shipping room. . . . That's JARECKI quality.
MANUFACTURING CO.
ERIE, PA., U. S. A.

fore and hadn't lasted didn't seem to me to be any reason why it couldn't be tried again and made to work. So I went to work on it. As I recall it, Mr. Hicks was the most discouraging talker among our first members. Strangely enough, he was one of the best workers too.

"We struggled along through the winter and spring and by the time we were to go to New York to attend the first national convention we had 15 members. That's the smallest number of members the Philadelphia association has had in its fifty years' history."

To men who have not had a share in the building of the National Association of Master Plumbers from its small beginnings to the largest trade association in the country, that sounds like a simple story. But get down to the small details with men who can approach Mr. Uber's record of fifty consecutive national conventions, and you'll find that simplicity deceptive.

"Plumbing is the finest business there is," says Mr. Uber. "It has done well by me, and I believe in doing well by it. That's why I make it a rule never to miss a convention."

Milwaukee to Entertain A. S. H. V. E.

Three days, June 27 to 29, will be important to members of the American Society of Heating and Ventilating Engineers as an extensive program of papers and reports will be discussed during the semi-annual meeting at the Hotel Pfister, Milwaukee, Wis.

President F. B. Rowley will preside at the meeting, and morning sessions will be held each day. The general arrangements for the meeting are in charge of John S. Jung and the reception and registration will be in the hands of John Shodron and Prof. G. L. Larson.

Two reports that are awaited with much interest because of their importance to the profession are those of the committee on ventilation standards and the committee on revision of constitution and by-laws.

Every effort has been made to arrange an especially attractive program for the visiting ladies whose entertainment will be in the hands of C. H. Randolph and Mrs., E. A. Jones with the other local chapter ladies as hostesses.

The men will have some special events to engage their attention when the business and technical sessions are over. E. A. Jones, president of the Wisconsin chapter, has charge of the golf, and the research cup tournament will be held at Ozaukee County club on Monday afternoon. Upon completion of the tournament and trips, the members will join the ladies for the evening's entertainment on the hotel roof garden.

On Tuesday afternoon inspection trips to industrial plants have been arranged. The feature of the entertainment program will be the banquet and dance on Tuesday evening.

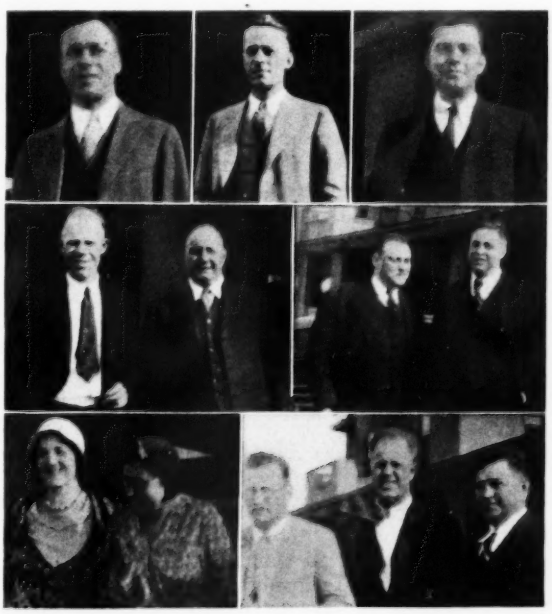
The complete list of committees follows: General chairman of arrangements, J. S. Jung; advisory, H. W. Ellis; reception, J. G. Shodron; registration, G. L. Larson; transportation, A. M. Wagner; finance, V. A. Berghoefer; entertainment, H. F. Haupt; golf, E. A. Jones; banquet, F. G. Weimer; publicity, Ernest Szekely; ladies' entertainment, C. H. Randolph and Mrs. E. A. Jones, hostess.

N.A.M.P. Activities Endorsed by Montana Master Plumbers

THE recommendations of the National Association of Master Plumbers in regard to meeting the competition offered by the direct-to-you and mail order houses, and its recommendation of co-operation with public utility companies in regard to appliance sales were thoroughly discussed at the annual convention of the Montana Master Plumbers' Association, held at Shelby on May 14. These several problems were referred to the various local associations in the state for consideration and action. The delegates approved the legislative program of the national association and expressed their intention of supporting the several bills included in its scope. They also endorsed Roy E. Thompson of Tacoma, Wash., for reappointment as a member of the board of directors of the national association.

Fred Briggs of Lewistown was elected president of the state association for the ensuing year, succeeding Walter Tillman of Shelby. F. L. Dye of Bozeman was elected vice president; and E. F. Kuschke of Billings, secretary-treasurer. The time and place for next year's convention will be determined by the incoming executive committee.

The matter of the state license law was discussed at some length and, since the law is now before the state supreme court in order to determine whether or not it is constitutional, the association's license committee was continued in office and given power to act as it may see fit, depending upon the decision of the state supreme court.



Top row, left to right: Fred Briggs, Lewistown, newly elected state president; F. L. Dye, Bozeman, new state vice president; Walter Tillman, Shelby, retiring state president. Middle row: Oscar L. Wall, Great Falls; Roy Crago, Helena; Leslie Hanson and Walter M. Arnold, past state president, both of Butte. Bottom row: Mrs. Fred Briggs, Lewistown; Mrs. Roy Crago, Helena; Roy F. Duggan, G. A. Mehl and A. A. Pinski, past state president, all of Great Falls

The reports of the various zone directors were, in most cases, of a favorable nature, and indicated that organization work in the state was progressing quite favorably. The following zone directors submitted reports on conditions in their respective districts: Walter M. Arnold, Butte; Fred Briggs, Lewistown; James F. Regan, Miles City; Thomas E. Luebben, Dillon; G. H. Mehl, Great Falls; F. L. Dye, Bozeman; E. F. Kuschke, Billings; and Roy Crago, Helena.

The meeting was officially called to order by President Tillman, who expressed his appreciation of the satisfactory attendance, and reviewed the activities of the officers during the past year. He appointed the following committees to function during the convention:

Credentials committee, Roy Crago of Helena and Leslie Hanson of Butte; resolutions committee, A. A. Pinski of Great Falls, T. F. Regan of Miles City and Ray F. Duggan of Great Falls; condolence committee, Walter M. Arnold of Butte, F. L. Dye of Bozeman and Thomas E. Luebben of Dillon; auditing, G. H. Mehl and Oscar L. Wall, both of Great Falls.

E. F. Kuschke, Billings, re-elected state secretary-treasurer

Fred Briggs, of Lewistown, addressed the convention on the subject of "Merchandising for the Master Plumber." Mr. Briggs has not only given a lot of thought to this subject, but has put his suggestions into actual practice in his business, and his talk was highly appreciated by the delegates. Ray F. Duggan, president of the Great Falls association, gave an interesting talk on matters pertaining to the distribution of plumbing materials, and his talk contained many helpful suggestions.

The report of the secretary-treasurer was read and referred to the auditing committee. A letter from Roy E. Thompson, national director, Tacoma, Wash., was read expressing his regrets at being unable to be present on account of conflicting dates, and extending his best wishes for a successful convention. Mr. Thompson has attended a number of Montana conventions, and many expressions of regret were voiced at his inability to be present.

The condolence committee presented resolutions of condolence on the recent deaths of Harry L. Hanson and D. H. Budd, both of whom were members with long records of faithful service in the Montana association. Harry L. Hanson was a past president of the Montana association, and served several years as a director of the national association. D. Harvey Budd had been a member of the association for many years. He served as secretary of the Montana state association about twenty years ago and was well known in plumbing and heating circles in the state.

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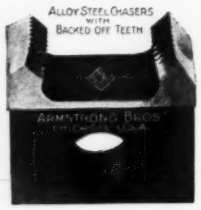
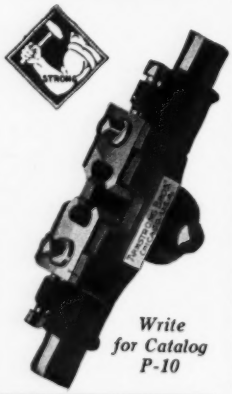
Adjustable Dies and Stocks

Cut faster — Cut smoother threads — Hold their edges.



ARMSTRONG BROS. dies cut easier, cut faster, for *chasers have clearance from cutting points*, do not "drag" like ordinary dies. Threads have a lathe-cut smoothness and dies come off pipe without tearing or jamming. These dies hold their sharpness, for they are made of special Vanadium Tool Steel. They fit all standard stocks.

ARMSTRONG BROS. Stocks are accurately machined, inside and out. Bodies are of Certified Malleable Iron; have no sharp angles or ridges—fit comfortably in the hand. Accurate tool balance gives them handiness. Take all standard dies.



From the line of "Better Pipe Tools"

ARMSTRONG BROS. Pipe Tools comprise the most complete line made. Each is an improved tool (designed after tests of other types and makes), with many special features. Each bears the distinguishing mark of a "Better Pipe Tool"—the Arm-and-Hammer Trade Mark. Look for this mark; it guarantees complete satisfaction.

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
323 N. Francisco Ave., CHICAGO, U. S. A.

Write for Catalog P-10

EVERY Brass Fitting made by PHOENIX is of RED METAL and receives the following tests:

PHOENIX
BRASS FITTINGS

Inspection after Casting.
Inspection prior to Threading.
Inspection of Threading.
Air-Under-Water pressure test.

"If it's a 'P.B.F' it's a Quality Fitting"

Phoenix Brass Fittings Corp.
Irvington, New Jersey

Co-operate on Gas Sales

(Continued from page 29)

tion to every member of our national association. The total issue of this communication was over 14,000. I have sent several letters to each state president, and two letters to each local secretary and local president telling them of these principles, and asking their support in our effort to have our entire membership adopt these principles and have them put into force in their communities throughout the country.

We have given additional publicity to these principles through our state journals and through our trade magazines.

The national officers of our organization are unanimous in the opinion that the gas merchandising principles will make it possible for the master plumber to become one of the principal retail outlets of gas appliances in every community where these principles are adopted.

The national officers are very much pleased at the attitude that our membership have assumed towards these sales principles. I have received innumerable communications telling me that our membership is now in a position, in various parts of the country, to act as merchandisers of gas appliances at something over and above their cost. In other words they have arrived at understandings with their gas companies and are now going to turn out to be gas salesmen.

GAS COMPANIES SHOULD CO-OPERATE

Considerable time and effort have been given to this work, and we are sincerely grateful to the work of Mr. Cuthrell's committee (I believe it is called the trade promotion committee), and to the very fine work and support that have been given to us by Major Alexander Forward. I did not know at the time that Major Forward spoke that he is the gentleman with whom I have had so much correspondence.

Before closing, I would like to extend to the officers of the Boston Consolidated Gas Company my sincere thanks for the kindness and the courtesy shown the committee, representing the Master Plumbers Association of Boston and Vicinity, when they sat down to talk this matter over with the representatives of the gas company. I am firmly of the opinion that if the same attitude of co-operation is assumed by the officers of other gas companies when meeting with our local committees of master plumbers, in the years to come these principles will prove of value not only to the master plumbers, but to the gas industry as a whole throughout the entire country.

I want to say one more word, and that is that we, the representatives of the national organization of master plumbers, are not at all willing that the gas companies should give up the selling of appliances and put them into the hands of men who know nothing whatever about it. We are entirely opposed to that. We believe that the gas company has something at stake; that they will see that they are put in properly, and I don't know what will happen to them if the gas company has its rights removed to sell those appliances which they can control.

Florida Masters Endorse National Legislative Program

A RESOLUTION was adopted at the annual convention of the Florida Association of Plumbing and Heating Dealers endorsing the bill now before congress for the separation of sub-contracts from the general contract on government building projects. This year's convention was the eleventh annual gathering of the Florida association, and was held at Tampa on May 2 and 3. Delegates from the five active Women's auxiliary organizations in the state met at the same time for their eighth annual state convention.

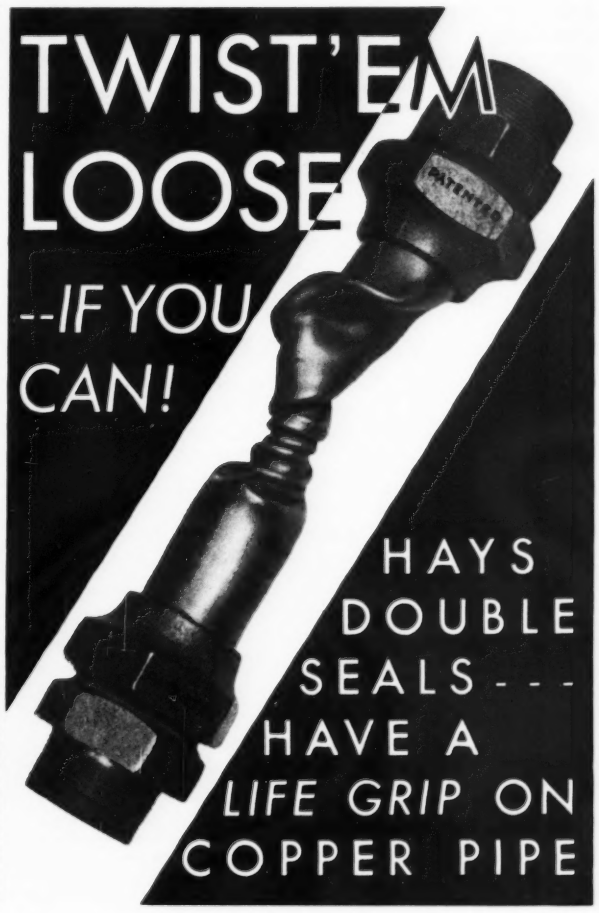
D. A. Mayfield, of Jacksonville, was elected president of the state association for the ensuing year, succeeding Lee Phillips of Lakeland. Other officers elected were Foster Fanning, of Winter Park, vice president; Charles Chapman, of Jacksonville, secretary; and Robert Langstrom, of Jacksonville, treasurer.

Some of the delegates and guests attending the annual convention of the Florida Association of Plumbing and Heating Dealers

State district representatives for 1932-33 are O. O. Blauvelt, of St. Petersburg, representing the southwest district; Charles Koegel, of Jacksonville, for the northeast district; J. H. Mann, of Winter Haven, for the central district; and P. N. Levi, of Miami, for the southeast district. E. J. Wishard, of St. Augustine, and D. A. Mayfield, were elected delegates to the national convention, which will be held in June in New York City.

Wilbur R. Dosher, of Wilmington, N. C., a director of the National Association of Master Plumbers, told the members of the national program and emphasized the importance of personal contact of each member with the authorized representatives of the national association. Other speakers were Mayor R. E. L. Chancey, of Tampa, who delivered the welcoming address; W. E. McAndrew, of Tampa, convention chairman; Lee Phillips, of Lakeland, retiring president; Mrs. Frank Williams, of Tampa, state president of Women's Auxiliary, and Franklin O. Adams, architect, of Tampa, director of the South Atlantic division, American Institute of Architects. Mr. Adams urged the members to stand for high quality of workmanship and materials in order to preserve the integrity of American building and of their business.

"The profession of plumbing insures clean, healthy



TAKING PUNISHMENT

Hays 2-in. Double Seal Fittings were subjected to the following stresses:

1. Subjected to 5200 inch-pounds of twisting force (see above). No slippage.
2. Next given hydrostatic pressure of 1835 pounds. No leak.
3. Alternate steam (at 112 pounds pressure and 336° F.) and water (at 50 pounds pressure—80° F.). No leak.
4. Subjected to practically perfect vacuum (29.8 in. of mercury). Suction held constant. No leak.
5. Constant vibration of 3000 impulses per minute maintained with Tabor Vibrators during each test.

Every size of Hays Double Seal Fitting was subjected to these tests and not once did a Double Seal Connection fail.

We have an interesting 16-page catalog that tells you all about the Hays Copper Plumbing Method. Send for a copy today.

HAYS MANUFACTURING CO., ERIE, PA.

Patented HAYS Patented
DOUBLE SEAL CONNECTIONS

home environment, and renders a real service to every well-regulated community," said Mrs. Foster Fanning, of Winter Park, representing the Women's Auxiliary.

Charles Chapman, of Jacksonville, read a paper which revealed the inroads upon the plumbing profession which have been made by other interests and urged the members of the association to insist upon quality in work and materials in order to meet the direct-to-you and mail order house competition.

"The descendants of those fine men who organized the association 50 years ago for the prosperity of the plumbing business have failed to keep step with the progress of the world and have let other interests gobble up their rightful heritage," Mr. Chapman said. "We have talked repression, depression, destruction, and construction; now let us talk reconstruction."

The 1933 state convention is scheduled for the old city of St. Augustine. E. J. Wishard, of that city, who was elected as delegate to the national convention in New York City, promised to make a detailed report to the state members and guaranteed a good convention in his city next year. The many historic sites and beautiful scenic spots of St. Augustine will add much to the pleasure of the visit, he assured the members.

The auxiliary members provided a luncheon the first day of the convention and they were entertained at dinner and a dance in the Master Plumbers' Home that night. Their co-operation was acknowledged by a unanimous resolution of appreciation passed by the association members at the close of their convention.

Colorado Masters Hold Mass Meeting

A group of Colorado master plumbers held a lively mass meeting recently at Colorado Springs to discuss organization and trade problems. The newly elected officers of the Colorado Society of Sanitary and Heating Engineers and the members of the Pueblo Master Plumbers Association were among those present. Joseph G. Hildebrand, secretary-manager of the Plumbing and Heating Industries Bureau, Chicago, and R. G. Thomas, of San Antonio, Tex., a director of the National Association of Master Plumbers, also attended the affair.

Those present included: E. H. Horton, Greeley, state president; Edwin B. Clayton, Denver, state vice president; J. J. Wafer, Denver, a member of the state executive committee. The Pueblo delegation included Messrs. Porter, Forbes, Casey, Mountain, MacIndoe, Krause and Lambert.

Colorado Springs representatives who were present included Messrs. Marsden, Bumstead, Jardine, St. John, Haas, Miller, Flatt, Olson, Benbow, Troutman, Sr., Troutman, Jr., Gilbert, Smart, Weber, Knight, Hart, Swisher and McCarthy.

La Crosse Plumbers Elect Officers

The Retail Plumbers Association La Crosse, Wis., has elected N. J. Hengel as its president for the ensuing year. Otto W. Marquardt is vice president of the association, A. E. Niebuhr is secretary, and William Woehlke is treasurer.

"Jenkins hasn't missed a bet in this valve"

Fig. 106-A Jenkins Standard Bronze Globe valve.

Jenkins
BRONZE IRON STEEL
VALVES
Since 1864

BUILT THROUGHOUT for *dependable* service

Husky one-piece screw-over bonnet; extra deep stuffing box that holds more packing; slip-on, stay-on disc holder with a Jenkins renewable composition disc; more spindle threads in contact with bonnet; are advantages of Jenkins Fig. 106-A that mean longer life, dependable service, reduced maintenance.

Clean-cut accurate threads, real valve bronze metal and strength throughout are other features that contribute to long, low-cost valve service.

Ask your supply house about this superior valve or write for Form 141. Made in globe, angle, cross and check patterns, screwed or flanged.

JENKINS BROS.

80 White St., New York, N. Y., 510 Main St., Bridgeport, Conn., 524 Atlantic Avenue, Boston, Mass., 133 No. Seventh St., Philadelphia, Pa., 646 Washington Blvd., Chicago, Ill.

JENKINS VALVES ARE ALWAYS MARKED WITH THE "DIAMOND"

Worcester, Mass., Association Elects Officers

The Master Plumbers Association of Worcester, Mass., has elected Leo F. Gilligan as its president for the ensuing year. The other officers of the association are Bernard F. Gilmartin, vice president; Harry L. Gustafson, secretary; and Carl F. Ostberg, treasurer.

Convention Dates

June 2 and 3, 1932—VIRGINIA—The annual convention of the Virginia Associated Plumbing and Heating Contractors, to be held at Alexandria, with headquarters at the George Mason Hotel.

June 8, 1932—NORTH CAROLINA—The annual convention of the North Carolina Association of Plumbing and Heating Contractors, to be held at Hendersonville.

June 9, 10 and 11, 1932—A. S. R. E.—The 19th Spring meeting of the American Society of Refrigerating Engineers, to be held at Massachusetts Institute of Technology, Cambridge, Mass.

June 14-17, 1932—N. D. H. A.—The annual convention of the National District Heating Association, to be held in Pittsburgh, Pa., with headquarters at the William Penn Hotel.

June 21, 22 and 23, 1932—N. A. M. P.—The 50th annual convention of the National Association of Master Plumbers, to be held in New York City, with headquarters at the Hotel Pennsylvania.

June 26-30, 1932—A. S. H. V. E.—The semi-annual meeting of the American Society of Heating and Ventilating Engineers, to be held in Milwaukee, Wis.

June 27-July 1, 1932—A.S.M.E.—The semi-annual meeting of the American Society of Mechanical Engineers, to be held at Bigwin, Canada.

August 2-5, 1932—A. S. S. E.—Meeting of the American Society of Sanitary Engineering, to be held at Rochester, N. Y.

October 7, 8 and 9, 1932—CALIFORNIA INSPECTORS—The annual convention of the Plumbing Inspectors' Association of California, to be held at Bakersfield, Calif.

October 10-14, 1932—AMERICAN GAS ASSOCIATION—The annual convention of the American Gas Association, to be held at Atlantic City, N. J.

COMING TRADE EVENTS

June 11, 1932—Regular meeting of the Federation of Merchant Plumbers of Southern California, to be held at Merchant Plumbers Hall, Los Angeles.

June 14, 1932—Monthly tournament of Plumbing and Heating Trades Golf Association of New Jersey, to be held at Canoebrook Club.

June 15, 1932—Monthly tournament of Plumbing and Heating Golf Association of New York, to be held at Fenimore Country Club, White Plains, N. Y.

June 20, 21, 22 and 23, 1932—Exposition of plumbing, heating and allied products, in connection with the 50th annual convention of the National Association of Master Plumbers in Madison Square Garden, New York City.

July 19, 1932—Monthly tournament of Plumbing and Heating Trades Golf Association of New Jersey, to be held at Metuchen Club.

July 27, 1932—Monthly tournament of Plumbing and Heating Golf Association of New York, to be held at Ridgewood Country Club, Ridgewood, N. J.

August 16, 1932—Monthly tournament of Plumbing and Heating Trades Golf Association of New Jersey, to be held at Essex Fells Club.

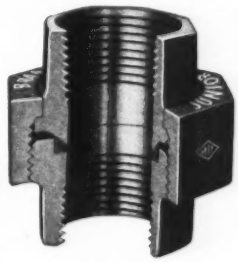
August 23, 1932—Monthly tournament of Plumbing and Heating Golf Association of New York, to be held at Elmsford Country Club, Elmsford, N. Y.

September 16, 1932—Monthly tournament of Plumbing and Heating Trades Golf Association of New Jersey, to be held at Raritan Valley Club.

September 29, 1932—Monthly tournament of Plumbing and Heating Golf Association of New York, to be held at Tamarack Country Club, Portchester, N. Y.

M|F

The M. I. F. Trade Mark on each fitting is for your protection



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BRASS TO IRON SEATS • BRANFORD 350* W. P. • BRANFORD JR. 250* W. P.

MALLEABLE IRON FITTINGS

STANDARD MALLEABLE • EXTRA-HEAVY MALLEABLE • RAILING FITTINGS • PLUGS AND BUSHINGS

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COMPARE! Compare Wolverine Brass Goods of *today* with the same goods of 1929! You'll find them even better. You'll find many improvements. You'll find even greater values. And you'll find, as always, the same high quality of materials—painstaking care and accuracy in machining—fine finish.

As ever, Wolverine Brass Goods remain completely dependable. As ever, Wolverine keeps faith with the plumbing trade.

WB WOLVERINE BRASS WORKS
GRAND RAPIDS, MICHIGAN

We Sell the Retail Plumbing Trade

WOLVERINE

OUR READERS TELL US

Kindly Wait a Moment!

To the Editor:

So many people continue to tell us that "Every thing has come down!"—that I am moved to object, and I am backing up my objection by mentioning here some of the items of "overhead," which, as far as I am concerned, have not come down, as follows:

Plumbers' license and bonds; automobile, fire, liability and workmen's compensation insurance; telephone, freight, gas, electricity, water, postage, advertising, legal advice, printing, stationery, taxes, assessments, interest, permits, lost accounts, collections, tools, charities, and dues to associations, clubs, lodges and fraternities, to which a man must belong for the sake of his business.

And there are no doubt other items, which you and many of your readers may think about.

Los Angeles, Calif. J. Neuerburg.

Wants Separation of Contracts

To the Editor:

Enclosed please find copy of a letter which I have addressed to the Supervising Architect of the Treasury Department.

I will appreciate your co-operation in this matter, and I believe if a number of those in the trade and heads of the plumbing industry will write letters along this line we will accomplish the desired results.

Fort Worth, Texas. (Signed) S. P. Osburn.

The inclosure is as follows:

Plans and specifications are now being prepared for a Federal Courts and Post Office Building in this city by W. G. Clarkson, of this city, associated with Paul P. Cret, architect of Philadelphia, which likely will be ready to go out to contractors in two or three months.

I would like very much to have a chance to figure the heating and plumbing in this building and to bid direct to the Government on this part of the construction.

I know this is contrary to the practices of your department, that you include it all in the general contract, which I do not think is right, for if we figure with general contractors and are low bidders with the contractor that gets the job, we still don't have a chance to get the work, for he immediately starts to peddle, or solicit other or lower bids that no responsible contractor can meet. By this method and practice, the general contractor adds to his profit without any benefit to the government, possibly to its injury. Local contractors in this industry and local labor often are thus precluded from obtaining contract and wages, while the general contractor (not the government) profits thereby. Outside laborers and mechanics are brought in while local men are deprived of employment, and that is exactly what has happened on the other building now being erected here at this time. I was low bidder for several weeks, but the general contractor finally found one to take the job quite a lot under my figure.

I notice that your department does make separate contracts for elevators, and I suppose it is because the manufacturers of elevators will not figure with general contractors because of their practices and because there is too much chance of losing on account of so many general contractors being in hard shape financially, and contractors' bonds are a bad risk.

Up until fifteen or twenty years ago, it was the custom of your department to let separate contracts for the installation of the plumbing and heating and electrical work in government building, and it was quite a blow to our industry and to local mechanics and laborers, and as a consequence to the whole local business interest, when this was discontinued, and I feel quite sure it did not help matters in your department either.

Please accept this as an application for plans and specifications for separate bidding. I trust you will see the injustice to contractors, mechanics, laborers and localities, by the present methods, and that you will do all you can to remedy such injurious practices.

Sees Dangers Ahead in Forced Air Heating

To the Editor:

We are certain, from the co-operation that you have given us in promoting the short course on forced air heating at the Michigan State College, that you are greatly interested in the future development of this forced air work. There is an angle here on which we think that trade publications should sound a warning.

Forced air heating work is based on scientific engineering. There are many pitfalls and dangers involved in the general adaptation of this method of heating, and unless dealers and installers, as well as manufacturers of this equipment, sense the responsibility and dangers involved there is certain to be very disastrous results to the warm air heating industry.

It is quite natural that manufacturers of long standing in the furnace industry should want to protect their position in this field, and many of them are now entering the field of forced air heating equipment. Most of these manufacturers have been in the furnace business for many years selling to the trade gravity installation equipment. Some of them think all that is necessary is to add a blower and air washer to their present furnace and convert their dealer organization from gravity mechanics to forced air heating engineers. The job is far from being as simple as this.

Recognizing the danger signal, each company should go very cautiously into this field. Practically every job that is sold, should be laid out and engineered by an engineer in whom one has a great deal of confidence. Notwithstanding the fact that every one of these jobs is laid out on a scientific and well balanced basis, involving the most accurate principles known in the field of forced air engineering, one will still meet some problems that require the most careful study and analysis.

Only within the past week, we have had an instance

develop on a job involving the installation of a furnace, of which we have installed approximately fifty of the same size during the past season, with very similar layout and ductwork. However, the job referred to has developed a certain difficulty that has a tendency to unbalance the combination that we were trying to get with our unit. The dealer is a very high grade man, the installation has been properly made according to our layout and yet there is a certain condition that has developed that is entirely different from what we have met in other instances.

Two of our engineers have spent two days on the job; we have called in the services of another high grade engineer co-operating with one of the blower companies, we are determined that we will locate and definitely settle the cause of this particular development because it is part of the progress of forced air heating work.

EXPERIENCE NEEDED TO AVOID DIFFICULTIES

This merely illustrates the difficulties that lie ahead if this forced air heating work is promoted largely by concerns who have an idea that engineers are not required, and that it is merely a question of boxing up a blower and air washer, delivering it to the railroad station consigned to their dealer.

We can foresee the possibility of many dealers as well as manufacturers entering this field who do not have the first fundamental principles of forced air heating and engineering, with a consequent result that will be very disastrous to this new industry just appearing on the horizon.

The public has learned to take as a matter of course in gravity heating that there are one or two rooms in the house that can not be heated, but if they are led to believe that forced air systems will overcome this difficulty, and if they find after installation, as they are apt to do if the job is not properly engineered, that the results are no better than with a gravity job, it will take only a few of these installations to greatly retard the future development of this work.

Perhaps we are taking this situation too seriously, however, we do not believe so. We believe very much will depend on the editorial columns of the trade publications as to the future development of this industry and we are inclined to feel that other manufacturers who sense the full magnitude of the opportunities that lie ahead will agree with the position outlined in this letter.

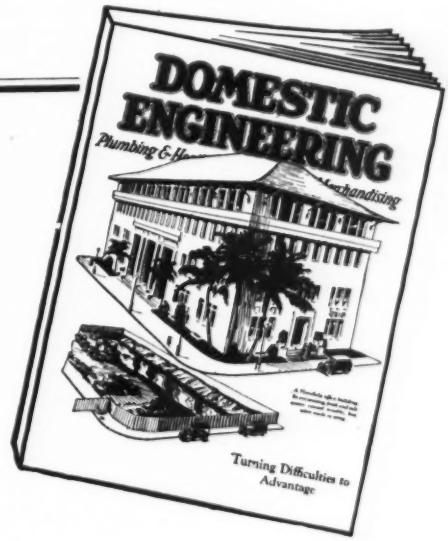
Thousands of new dealers will flock into this new industry without preparation, without engineering knowledge, unless this note of warning is sounded by the manufacturers, trade publications and others interested in this field.

(Signed) E. I. Dail,
President and General Manager,
Lansing, Mich. Dail Steel Products Co.

Plumber Heads Chamber of Commerce

Samuel C. Cannon, master plumber of Middletown, Conn., has been elected president of the Middletown Chamber of Commerce. Mr. Cannon is associated with the plumbing and heating contracting firm of C. M. Cannon & Son.

What do you want?



Are you looking for a new man in your organization? Perhaps a salesman, an estimator, a man with a good jobber or contractor following—a man capable of building up new territories?

Turn to the classified advertising pages of this issue of DOMESTIC ENGINEERING. Look over the "Situations Wanted" ads. If the man you want isn't advertising there, send us your requirements and we'll place your ad in the "Situations Open" column and you'll get results.

In DOMESTIC ENGINEERING'S classified advertising pages, you have a choice of the best, no matter what you want.

Eight cents a word is the rate.

DOMESTIC ENGINEERING
Plumbing & Heating Contracting and Merchandising
1900 Prairie Avenue Chicago, Illinois

Some Legal Questions

Answered by "The Judge"*

Liability of Retiring Partner for Debts of the Continuing Partnership Where Retiring Partner's License is Used by the Continuing Firm

Editor, DOMESTIC ENGINEERING:—Will you kindly inform me in regard to the following: If a master plumber retires from a general partnership and lets the other party, or a new party altogether, operate the plumbing and drainage business under a master plumber's license and bonds issued in the name of the retiring partner, although the name of the business itself may be changed, can the retiring partner be held responsible for any debts incurred later, or be subject to any legal action for damages of any kind after retiring from the business, even though he may have announced in the newspapers that he is no longer connected with the business.

Illinois. A. K. H.

Answer:—First, let me call your attention to the fact that a mere advertising notice of the retirement of a partner in a newspaper is not sufficient to relieve him from obligation to people or firms that have done business with his firm prior to the time of his retirement. Existing creditors or others who have had dealing with a partnership, are entitled to actual notice of the change in the make-up of the partnership, if the retiring partner is to be relieved of obligation to them after he has retired from the partnership. In other words, if a partner retires, and the business is carried on under the same name, or one so similar to the old partnership name as to mislead people into thinking that it is the same firm, the retiring partner must actually notify all persons with whom the partnership has dealt in the past of the fact that he has retired from the firm, in order to relieve himself from any liability to the firm's creditors. It is sufficient as far as other people and creditors who begin to do business with the firm after the retirement of the partner are concerned, if the retiring partner advertises in the newspapers to that effect. The above is the law, speaking generally.

WHEN THE NAME OF THE BUSINESS IS CHANGED

Now we come to the case where the name of the business has been changed upon the retirement of the partner. In such a case, unless the retiring partner does or says something which misleads those who had had dealings with the old firm when he was a partner, he will not be liable for debts of the new partnership any more than he would for a partnership on the other side of the world. But it is rather easy for a retiring partner to do something which will mislead those who have had dealings with the old firm. For instance, he might permit the new firm to use his plumber's license and bond.

It would be difficult for you to prove to anybody that you are not still a partner in the business in some way, as long as you permit the use of your license and bond. In fact, under your Illinois Law, I don't see how you could very well dispute the claim that you are still a partner, for if you permit your license to be used by some other person, with whom you have no connection, you are helping that other person to break the law. Your Revised Statutes of 1929, Chapter 24, Section 675, provide: "Any person now or hereafter engaging in or working at the business of plumbing in this state, either as a master plumber or employing plumber, or as a journeyman plumber, shall first receive a certificate thereof in accordance with the provisions of this act." The penalty for breaking this law is a fine of from $5 to $50.

A PARTNER IS LIABLE WHEN HIS LICENSE IS USED

You can see that it would not be very satisfactory if some person became a creditor of the new firm, knowing that your license was being used, and tried to make you responsible for a bill. You could not very well say that you were not responsible on the ground that the use of your license and bond was illegal, and that although you permitted this illegal practice, you should not be held liable. I cannot very well see how you can escape all the liabilities of a partner as long as your license and bond are used, no matter whether the name of the firm is changed. As long as you permit your license and bond to be used I believe that you are in danger of being held as a partner,—and this would be so, I think, even though the name of the firm is changed and even though it removes to another location. Ask yourself what your reaction would be, if you should see that certain alterations were carried on in a building under the license of John Jones. You would believe that he was in some way interested in that work, wouldn't you? The ordinary person could never be made to believe, especially if it were going to cost him something to believe it, that you have nothing to do with a business which is being carried on under your license and bond. In fact, even though you should give notice properly to all persons with whom the old partnership had carried on business that you had retired from the partnership, I believe that you would still be in danger of being held liable as a partner to those old creditors, on the ground that you were still a partner, even though you claimed not to be. In many cases, partners claim that they are not partners, but are held to be partners by the Court.

Possibly there are facts which you have not stated in your question which would change the entire complexion of matters. But as you state them in your question, I don't think that a person can relieve himself from liability for partnership debts, if he permits his master plumber's license and bond to be used by the continuing partnership, even in a case where the firm name is changed. Surely, the use of a master plumber's license and bond is holding out to the world the information that such

* Every effort is made to the end that these answers may be authoritative. However, we cannot assume any responsibility because of the very nature of the service, which is rendered without a personal interview.—Editor.

master plumber is engaged in the business, and to the extent that such misleading information is permitted to get around, the master plumber is liable as a party to the scheme which is forbidden by law.

It is well to remember that it is dangerous to retire from a partnership even under the best of circumstances. Any little string that is left hanging may be the means of tieing the retiring partner into the partnership again, against his will; and it may be even against the actual facts and intentions of the parties. It is such a complicated and dangerous proceeding, that I suggest that you secure competent legal advice before putting your retirement through, if you contemplate the action yourself which you ask about in your question.

Tri-City Development League Selects New Board Members

Eight new members were nominated for membership on the board of directors at a recent meeting of the Tri-City Plumbing and Heating Trade Development League, held at Moline, Ill. The formal election will take place at the May meeting. The selection of the nominating committee follows:

Manufacturers' group: C. H. Carlson of D. C. Murphy Co., Davenport, Ia., and P. G. Carroll of Kewanee Boiler Corp., Kewanee, Ill.

Wholesalers' group: R. E. Feeney of May Co., Moline, and L. R. Sidney of Crane Co., Davenport.

Master plumbers' group: W. H. Collins and R. C. Lamp, both of Rock Island.

Journeyman plumbers' group: R. F. Brasher of Rock Island and F. H. Papenbrock of Davenport.

The educational feature of the meeting was a talk on home insulation by George A. Holland of the Home Insulation Co. He illustrated his talk with motion pictures.

The Metal Market

	May 24	Avg. Apr., 1932	Avg. Feb., 1932	May, 1931
PIG IRON—				
No. 2 foundry, Chicago	$16.00	$16.00	$16.50	$17.50
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb	1.60c	1.60c	1.50c	1.65c
Blue annealed sheets, No. 10, Pittsburgh, per lb	1.70c	1.70c	1.70c	1.85c
*Hot rolled annealed sheets, No. 24, Pittsburgh, per lb.	2.20c	2.20c	2.15c	2.25c
Galvanized sheets; No. 24, Pittsburgh, per lb	2.85c	2.85c	2.75c	2.80c
TIN—				
Straits tin (spot) New York	21.25c			
LEAD—				
E. St. Louis	2.90c			

The Old Metal Market
Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	9 c	Copper, light	2⅜c
Block tin pipe	13½c	Heavy crucible copper	3⅜c
Brass, light	1⅜c	Zinc, old	1 c
Brass, heavy yellow	1⅝c	Lead, heavy	2 c
No. 1 comp. red brass	2¼c	Solder joints (close cut)	2¼c
Heavy copper and wire	2⅞c		

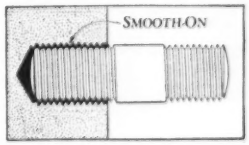
NOTE: Prices are those quoted on Monday of this week.
*Comparisons are with old classification No. 24 black sheets.

There is no secret to the smooth, easy cutting and threading of Fretz-Moon Pipe. It is made to cut and thread better than ordinary pipe. The steel is a special grade. The advanced process of manufacture is exclusive. The result is an easier-cutting pipe of high uniformity with absolute freedom from "burnt spots" and other defects which might cause installation trouble. Fretz-Moon Pipe saves time—also money. Try it.

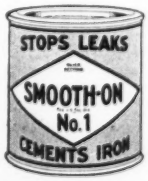
FRETZ-MOON TUBE COMPANY, INC. • BUTLER, PENNA.

FRETZ-MOON PIPE
BLACK AND GALVANIZED

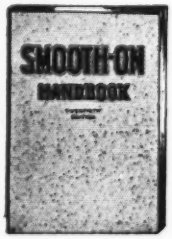
For stripped threads, emergency pipe joints, bolt anchorages, etc.



METALLIZED Smooth-On No. 1 holds against high tension, torsion, compression, fluid pressures, heat, cold and vibration. It is therefore an ideal emergency thread anchoring material for defective machine screws, bolts, studs and nuts, and often affords the only practical joint seal for badly defective threads in pressure lines carrying steam, water, oil, ammonia, etc.



The Smooth-On Handbook is filled with instructions, diagrams, etc., showing quick, simple and permanent repairs for leaky joints, loose threads, sealing cracks and breaks in boilers, tanks, etc. Keep a copy on your desk for ready reference.



Write for the Smooth-On Handbook and get Smooth-On No. 1 in 1 or 5-lb. can or 25 or 100-lb. keg from your dealer or if necessary direct from us.

SMOOTH-ON MFG. CO., Dept. 12
570 Communipaw Ave. Jersey City, N. J.

***Do it with* SMOOTH-ON**

New Trade Literature

New Bulletin on Welding Fittings

A new Bulletin No. WT17 has just been issued by Bonney Forge & Tool Works, Forged Fittings Division, Allentown, Pa. It contains complete description of the engineering principles of its line of welding fittings. Working data, tables of sizes, and illustrations of typical installations are also included.

Catalog of Oil Burning Boilers

Weil-McLain Co. of Chicago has issued a 20-page catalog, 8½ x 10½ in. in size, illustrating and describing its line of oil burning boilers for steam and water heating systems, including jacketed, round and square boilers. The jacketed boilers are made in steam sizes with a rating from 530 sq. ft. to 3,075 sq. ft., and in water sizes from 890 sq. ft. to 5,050 sq. ft. The round boilers are made in steam sizes with a rating from 430 sq. ft. to 1,860 sq. ft., and in water sizes with a rating from 710 sq. ft. to 3,360 sq. ft., while the square boilers in steam sizes have a rating from 1,220 sq. ft. to 17,125 sq. ft., and in water sizes from 2,010 sq. ft. to 28,250 sq. ft.

Announcing a New Stoker

The Fire King Stoker Company of Indianapolis, Ind., has issued a circular announcing the addition of a new model to its line of stokers. This model is rated at 950 sq. ft. of steam radiation with a maximum coal feed capacity of 40 lb. an hour. Provided with multiple feed control it gives the user the advantage of being able to vary the amount of coal in any degree from 1 lb. to the maximum of 40 lb. per hour. The air can also be regulated to comply with the requirements of the fuel. The hopper has a fitted cover for cleanliness.

Automatic Water Heater Information

EverHot Heater Company of Detroit, Mich., has issued a folder, 24½ x 11 in., containing information about and specifications for its line of automatic water heaters. Special attention is called to the fact that these heaters are equipped with pilot safety, pressure safety, gas filter and temperature safety cut-off. The gas filter prevents foreign matter from interfering with the perfect operation of the unit, and it has been designed to prevent trouble calls. The pilot safety is described as being so simple in construction that its operation is positive whenever it is called upon to function, and it is adjusted for correct operation at the factory.

Catalog of Bathroom Furniture and Accessories

Conant Bros. Co. of Somerville, Mass., has issued a 44-page catalog, 8½x11 in., describing and illustrating its line of bathroom mirrors, cabinets, accessories and furniture. Much space is devoted to the company's steel recess medicine cabinets with mirrors and with chromium plated brass door frames, bathroom supply cabinets, wall cabinets, corner cabinets and frameless mirrors. The catalog also lists solid brass accessories such a towel bars, tumbler holders, grab bars, sponge holders, shower soap holders, toilet paper holders, toothbrush holders, hooks and liquid soap dispensers, as well as glass accessories such as glass towel bars and glass shelves. The company's bathroom, bedroom and boudoir furniture is also included, the most notable being vanity tables with triplicate mirrors, bedroom chairs and bathroom stools. This catalog is printed on highly glazed paper and it is copiously illustrated with high grade halftone engravings. It is bound in a very artistic cover.

Circular on Coal Stokers

Butler Manufacturing Co. of Kansas City, Mo., has issued an 8-page circular, 8½x11 in. in size, illustrating and describing in detail its line of coal stokers made in sizes for all types of home and commercial heating plants, small and large, and for power boilers up to 200 h.p. A feature of these stokers is a patented system of forced draft distribution through specially designed retorts and tuyeres. In this system the air flow is adjustable for the correct combustion of practically all grades of bituminous stoker coals. This line fills nearly every automatic heating requirement in connection with bituminous coal.

Striking Catalogs of Heater Division of Motor Wheel Corp.

The Heater Division of the Motor Wheel Corporation of Lansing, Mich., has issued four catalogs, all in three colors and with a page size of 8½x11 in., describing and illustrating some of the corporation's products, as indicated by their titles, which are as follows: "Oil Burning Equipment for Heating Homes by Steam and Hot Water," "Automatic Oil-Burning Water Heater for All Domestic Requirements," "Hot Water for Commercial Purposes, Produced by a Revolutionary Principle of Oil Burning," and "Comfort for All the Seasons by the Weather Control Unit." The last named catalog stresses the point that the weather control unit has been designed to be effective during all four seasons and to provide comfort without detriment to health. It is the outcome of the belief that the control of inside weather is a matter requiring scientific analysis and application. This means that air conditioning is not simply a problem of heating, or ventilating, or cooling, or humidifying; but a matter of considering all four problems as one and solving them simultaneously.

Automatic Water Supply Systems

The National Water Lift Co. of Kalamazoo, Mich., has issued a folder, 15 x 11 in., illustrating and describing its line of automatic water supply systems, which are made in various sizes with capacities ranging from 222 gallons per hour up to and including 523 gallons per hour.

J. F. Aurandt, plumbing and heating contractor of Altoona, Pa., operates this "shop on wheels" and finds it a big help in his business. It is equipped for all kinds of repair jobs, and is the only truck of its kind in the city. Mr. Aurandt states that about 125 of his customers depend on the truck for their plumbing and heating needs

Business Changes

Chicago, Ill.—Hanley & Company, plumbing, heating, piping and ventilating contractors, has moved its offices and shops to 1501-05 South Michigan avenue.

Cambridge, Minn.—The plumbing and heating contracting firm of Peterson & Whitney has been dissolved. August Peterson has retired, and the business will be continued by Cecil Whitney.

Denver, Colo.—The University Plumbing & Heating Co., 1226 East Evans avenue, of which D. A. Bell is owner, has built an addition to its shop. Mr. Bell now has a larger showroom, office and work shop. Over his store he has two modern apartments.

Fairmont, Minn.—Walter Krost, plumbing and heating contractor, has moved to larger quarters in the Tanner building.

St. Paul, Minn.—F. W. & J. J. Spriggs, plumbing and heating firm, 160 West Fourth street, have recently enlarged their showroom and modernized it. A line of electric refrigerators has been added.

San Francisco, Calif.—Ed. Rosenbaum has moved his plumbing and heating business from 115½ Waverly to 821 Washington street.

New Contractors and Incorporations

Los Angeles, Calif.—The Pat H. Connors Co. has engaged in the plumbing business at 4650 York boulevard, the members of the firm being Pat. H. Connors and M. H. Schlichter.

Ellendale, N. D.—A new plumbing and heating business, under the name of Kuch & Son, has been opened here. The proprietors moved from Oakes, N. D., where they had been established for the past year.

New Prague, Minn.—W. J. Hanzel has opened up a plumbing and heating business here.

Colby, Wis.—William Pacholke, formerly with the Colby Hardware Co., has opened up his own plumbing and heating business in this city.

Cameron, Wis.—Isaacson & Isted, of Chetek, Wis., have engaged in the plumbing and heating business here.

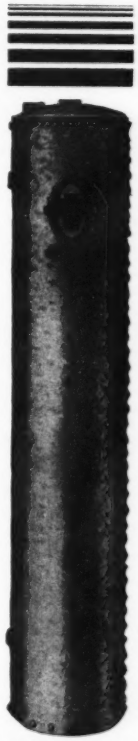
New York City—Waletzky, Inc., has been chartered, with a capital of $5,000, to establish and operate a plumbing engineering and contracting business. The new firm is represented by I. Lublin, 1457 Broadway.

New York City—The Local Plumbing and Heating Corp. has been organized, with a capital of $10,000, to establish and operate a plumbing and heating engineering and contracting business. D. S. Wolfson, 551 Fifth avenue, represents the new concern.

Huntington Park, Calif.—Johnson Plumbing and Heating Co. has been established here to conduct a plumbing and heating contracting business at 6038 Pacific boulevard. The owner is Emil A. Johnson, formerly of the E. D. Luther Plumbing Co., of Huntington Park.

Los Angeles, Calif.—Fred L. Scherer recently opened a shop and office at 234 South Figueroa street, and will engage in the plumbing and heating contracting business.

New York City—The Cypress Plumbing and Heating Corp. has been organized, with a capital of $1,000, to establish and operate a plumbing and heating engineer-



Do You *and* Your Customers *Talk the Same "Language"?...*

Are you giving them what they want in long range boiler service?

Are you gaining their good will and promoting good business and future profits?

Start now and give your business the "go" signal! Learn what user satisfaction really is by installing

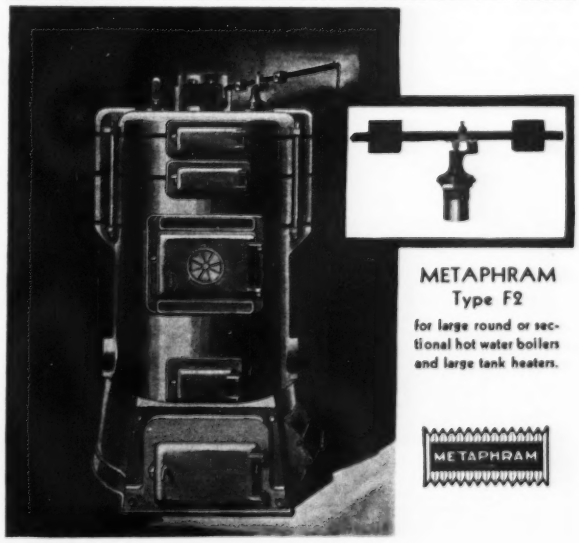
PENNSYLVANIA RANGE BOILERS

Sold Thru Jobbers

Complete line of *All Welded* and *Riveted and Welded* Galvanized Range Boilers.

Jobbers: Write us for sample of any boiler for 30 day inspection.

Pennsylvania Range Boiler Co.
Est. 1895
24th & Washington Ave. Philadelphia, Pa.



METAPHRAM Gradual Control
covers the entire range of domestic hot water and low pressure boilers and tank heaters, either gas, oil or coal fired.

Descriptive Bulletins on Request

NATIONAL REGULATOR CO.
2317 KNOX AVENUE CHICAGO

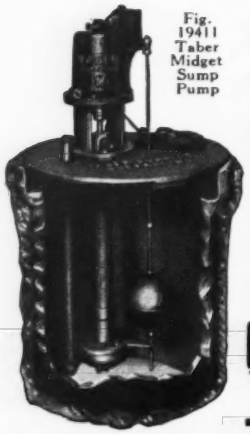


Fig. 1941 I Taber Midget Sump Pump

It works . . . . . when needed most

After heavy rain-storms there is an increased demand for Taber automatic Midget Sump Pumps. Frequently they replace "low price" cellar drainers inadequately motored.

Why wait for a peak load to tell whether the pump will work? Avoid troublesome, profitless service calls . . . install Taber first. The owner of any sump pump expects "Dry Cellar Insurance." He gets it with a Taber Midget.

Bulletin and prices on request. Also see Page 923 Domestic Engineering Catalog.

TABER

TABER PUMP CO *Est 1859*

290 Elm Street, Buffalo, New York

RIDGID

PIPE CUTTERS

300% More Cuts—

Clean, practically no Burr

Now Made With SOLID HUB

The RIDGID Thin Blue Steel Blade is now made with a solid hub — fits any RIDGID Type Cutter — Steel reinforced cutter housing guaranteed not to break or warp. See it at your Jobber!

THE RIDGE TOOL CO.

ELYRIA, OHIO

"ACME" BEVELED BIBB WASHERS

You must have Bibb Washers, so why not select "ACME" Bibb Washers. In seven different sizes, made of a black rubber compound, highly resistant to hot and cold water, "ACMES" give the kind of service that eliminates complaints and call backs.

Write for full information

LAVELLE RUBBER COMPANY

320 West Illinois St.

CHICAGO, ILLINOIS

The name "ACME" is stamped on every washer.

STEEL IRON

CHALLENGE NIPPLES

BRASS COPPER

plumbers prefer them

? Ask us why

FRICK-REID SUPPLY CORPORATION

NIPPLE DIVISION

117 Sandusky St., N. S., Pittsburgh, Pa.

ing and contracting business in Queens. J. Heilman, 1133 Broadway, represents the new firm.

New York City—With a capital of $5,000, the firm of Harry M. Litvin, Inc., has been chartered, to establish and operate a plumbing and heating engineering and contracting business in the Bronx. L. Alpert, 11 West Forty-second street, represents the new concern.

Los Angeles, Calif.—David Andrew Scott has re-engaged in plumbing and heating contracting after having discontinued his business over a year ago. Shop and office are located at 712 North McCadden street.

Milwaukee, Wis.—Johnson Engineering Co., Inc., has been formed to do business here. The firm is incorporated with 100 shares at $25 each. It will engage in the heating and refrigeration contracting business. Incorporators of the company are announced as E. Blake, G. Reynolds and R. Cooper.

San Francisco, Calif.—W. M. & A. F. Miller have engaged in the plumbing and heating business at 1119 Ocean avenue.

San Francisco, Calif.—A new plumbing and heating establishment has been opened at 1022 Bush street by Walker Brothers.

Saginaw, Mich.—The Public Service Plumbing & Heating Co., Inc., has been chartered, with headquarters at 93 West Genesee avenue, in this city.

New York City—The Georgo Heating and Plumbing Company has been organized and incorporated, with a capital of $10,000, to establish and operate a plumbing and heating engineering contracting business. H. Levy, 1566 Forty-seventh street, Brooklyn, N. Y., represents the new firm.

Albany, N. Y.—Doyle and Co., Inc., has been chartered, with a capital of 200 shares no par common stock, to establish and operate a plumbing engineering and contracting business. F. Pedlow, local attorney, represents the new concern.

Hartford, Conn.—The City Plumbing & Heating Co., recently noted as incorporating, is now established at 111 Pembroke street. The officers are: President and treasurer, Abraham D. Feingold; vice president, M. Baller; secretary, R. Feingold; assistant secretary, William W. Bernstein.

Stamford, Conn.—L. A. Winslow, Inc., has been granted a charter to engage in the plumbing contracting business with authorized capital of $50,000. The incorporators are: L. A. Winslow, E. L. Somerville and E. M. Morgan. Mr. Winslow has been a partner in the firm of Winslow & Gibbs for a number of years.

Bridgeport, Conn.—Frank Luciano has recently established shop and offices at 1086 Barnum avenue, where he will engage in the plumbing and heating business. The building occupied by Mr. Luciano is a new one, 24x62 ft.

Joseph Ahlbach and Charles Mayer, both of San Francisco, at the meeting of the Northern California Federation of Plumbing and Heating Industries, held recently at San Francisco

WHAT WOMEN ARE DOING

BY DOROTHY EDWARDS

National President Outlines Convention Plans

Mrs. J. Preston Perham, of West Roxbury, Mass., president of the Women's Auxiliary to the National Association of Master Plumbers, has addressed the following bulletin to all auxiliary members in order to familiarize them with arrangements for the forthcoming national convention:

The fourteenth annual convention of the Women's Auxiliary to the National Association of Master Plumbers will be held in New York City, June 21, 22 and 23, 1932. Headquarters—Hotel Pennsylvania.

State divisions, and local auxiliaries where there is no state division, will please send delegates with proper credentials, and report to credential committee. National dues must be paid, otherwise delegates will not be allowed to vote. Meetings will be held on Wednesday morning, June 22nd, at 10:00 o'clock; Thursday morning, June 23rd, at 9:30 o'clock, and Thursday afternoon at 2:00 o'clock in the small ball room on the mezzanine floor.

Mrs. J. Preston Perham

All state divisions will report for their combined auxiliaries. Local auxiliaries where no state division exists will also report. Will all who are to report please have their reports typewritten and do not make them too long!

State divisions, and local auxiliaries where there is no state division, will please send the number of new members taken in since last June to this office before June 1st, 1932, so we will be able to award the prizes at the convention. It would help a bit if you would state what your membership was last June.

Is there some work that you think the National Auxiliary should take up next year? If so, come prepared to tell us about it and we will talk it over. Last year a Student Loan Fund was mentioned, also a fund for needy widows of master plumbers. Do either of these things appeal to you?

We are again to have a beautiful quilt at the national convention, made by our dear past president, Mrs. E. D. Hornbrook, and I am sure you will all do your part that we may realize a goodly sum on it. We are very grateful to her for we know it takes time and patience to make a quilt such as she has made for us in the past.

Hoping to have a large attendance at the 1932 Convention, and that it will be all that we would like it to be. May each member do her best to make it a success by her loyal support, and attendance at the meetings.

Yours most sincerely,

(Signed) Sarah B. Perham,

President, Women's Auxiliary, N. A. M. P.

Florida Auxiliary Holds Annual Convention

Mrs. Frank R. Williams, Tampa, was elected state president at the eighth annual convention of the Florida Division, Women's Auxiliary to the Master Plumbers Association, which was held May 2 and 3 at Tampa. Other officers elected were Mrs. Lee Phillips, Lakeland, first vice president; Mrs. E. J. Wishard, St. Augustine, second vice president; Mrs. C. F. Armstrong, Bradenton, third vice president; Mrs. Myrtis Mann, Winter Haven, secretary; Mrs. Charles Koegle, Jacksonville, treasurer. Mrs. Williams appointed Mrs. Foster Fanning as parliamentarian and Mrs. W. E. McAndrew, corresponding secretary.

Mrs. W. E. McAndrew was introduced and she in turn introduced Mrs. Foster Fanning and Mrs. Frank Williams. Mrs. Lee Phillips gave an accurate account of the national convention held in Milwaukee, and Mrs. Koegle told of the seventh annual Florida convention held in Palm Beach last year.

Greetings were brought to the meeting from the National Association of Master Plumbers by Mr. and Mrs. Wilbur R. Dosher of Wilmington, N. C. Mrs. E. D. Hornbrook, past national president, sent greetings, as did Mrs. J. Preston Perham, national president.

Three bulletins from the National Women's Auxiliary were read and a vote of thanks given to Mrs. Perham for her splendid work as president of the national auxiliary. The Florida auxiliary voted in favor of the action of the national auxiliary in presenting to the National Association of Master Plumbers a bronze tablet to be hung in the national office in Washington.

Tampa won the membership prize offered by the state to the auxiliary having gained the most new members during the year, but returned the cash prize back to the state treasury.

Resignations were read from Mrs. C. B. Perkins, second vice president, and Mrs. H. Spencer Fromberger, secre-

New officers of the Florida State Auxiliary, left to right: Mrs. Lee Phillips, Lakeland, first vice president; Mrs. W. E. McAndrew, Tampa, corresponding secretary; Mrs. David Mayfield, Jacksonville, historian; Mrs. E. J. Wishard, St. Augustine, second vice president; Miss Mirtis Mann, Winter Haven, recording secretary; Mrs. C. F. Armstrong, Bradenton, third vice president; Mrs. F. R. Fanning, Winter Park, parliamentarian; Mrs. Frank Williams, Tampa, president, and Mrs. Charles Koegle, Jacksonville, treasurer

A LIFETIME OF SERVICE FROM EVERY DART UNION

DART UNIONS will save you money every time you use them. No kick-back from your installations because of leaks. The TWO BRONZE TO BRONZE SEATS assure that. Pipe ends and nut are made from heavy air refined malleable iron, assuring a life time of service.

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Dart Unions

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E-Z RADIATOR HANGER
The Complete Line

For all types of hung radiators—any and all conditions. Use these proved hangers for better, easier and quicker installations. Fully adjustable both horizontally and vertically. Write for details and prices.

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4"x5" Oval Float

NO-SOL COPPER FLOATS

No-Sol Floats incorporate all features necessary to the satisfactory performance of a tank float.

Each float is individually tested and guaranteed.

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5" Round Float

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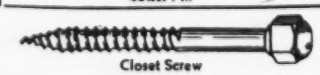
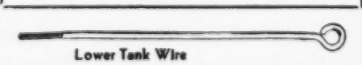


Closet Screw



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HINDLEY MFG. CO.
VALLEY FALLS, RHODE ISLAND

tary. These were accepted with regret. Both women have moved out of the state.

The auxiliary went on record as approving the stand taken by the master plumbers association of the state in promoting the certified building plan. Mrs. Foster Fanning gave a talk on the work for the coming year and it was voted to take up the work of sanitation in various Florida cities. Also plans for a poster and essay contest and other means of furthering beneficial work were discussed. Mrs. Fanning was appointed chairman of the sanitation committee for Florida. She is to appoint a chairman in the different cities.

In view of the fact that there will be a "Hall of Fame" at the 50th annual convention of the master plumbers, which will carry the photographs of all past presidents, a resolution was adopted asking that a portrait of Emily Virginia Hornbrook be placed in that group. It was also suggested that the portrait bear the inscription "Emily Virginia Hornbrook, Mother of the Women's Auxiliary to the National Association of Master Plumbers." Mrs. Fanning was elected delegate to the national convention in New York City.

The entertainment consisted of a luncheon at noon, Monday, a dinner at the Hillsboro hotel, followed by dancing at the Master Plumbers Club House, Monday evening. Souvenir compacts and corsages were furnished by the Tampa auxiliary to the visiting ladies. During an intermission at the dance, a playlet taken from a story which appeared in "Domestic Engineering" entitled "Selling a Sink Is a Tough Job" was given, with Mrs. Frank Williams, Mrs. G. B. Shaw and Mrs. O. E. Kruse as the principal characters. Mrs. Charles Godsey sang two lovely numbers at the men's opening session on Monday. At the close of the convention, on Tuesday noon, a Dutch treat luncheon was given at the Hillsboro hotel. Next year's meeting will be held in St. Augustine on May 1 and 2.

Entertains Denver Auxiliary Members

Mrs. Edwin B. Clayton recently entertained the Ladies Auxiliary to the Denver Master Plumbers Association at her home. Among those present were: Mesdames Guy Stocking, C. R. Cooper, John Hensler, George Smith, Vincent Kandorf, F. X. Kreidl, Carl Thurston, Robert Demmer, J. P. Brickey, Harvey H. Mellema, V. A. Kiser, Fred Samson, F. X. Bordeau, Edwin B. Clayton and Wm. Hensler.

After dinner and when the business session was over the usual game of Monte Carlo whist took place. Mrs. John Hensler, Mrs. G. A. Stocking and Mrs. Harvey H. Mellema won the honors.

Card Party Held in New Britain

The New Britain, Conn., Women's Auxiliary gave a bridge party recently at the New Britain Gas Company's club rooms. Mrs. Herman Feigenbaum, Mrs. William Fenn, Herman Feigenbaum, Fred Loomis and Henry Prudont won honors. The ladies served refreshments, and dancing followed.

Tri-City Group Holds Big Party

On April 14, 200 members of the Tri-City Plumbing and Heating Development League and members of the Women's Auxiliary attended a card party and dance at the Peoples Power Auditorium, Moline, Ill. Honors in bridge were won by Mrs. Kirk A. Journy and C. C. Rosenfield of Rock Island and Mrs. Hugo Stange and Hugh Murray of Moline. Miss Margaret Bredar and Miss Mary Housen of Rock Island and W. A. Johnson and Alex Batchelor of

Moline made high score in 500. Vocal solos were given by Mrs. John A. Day, Jr., Miss Ann Ella Viren, and Miss Marguerite Viren entertained with tap dances and songs. The Women's Auxiliary to the Rock Island-Moline Master Plumbers Association was in charge of refreshments and the card games.

Bronx, N. Y., Auxiliary Holds Successful Card Party and Dance

The first annual card party of the Women's Auxiliary to the Master Plumbers Association of the Bronx, N. Y., was held on May 6 at the association rooms. More than 150 persons were present. After the games, refreshments were served and then there was dancing. Mrs. Woodward F. Ebner was chairlady of the entertainment committee and was assisted by Mrs. S. George Arnone, Mrs. Joseph F. Egan, Mrs. Charles Kirchhof, Mrs. George Ochs and Mrs. Anthony Platt and Mrs. Louis Guerr. The party was a success both financially and socially.

Milwaukee Women Give "Apron Party"

Members of the Milwaukee Master Plumbers' Association were entertained recently at a homey "family party" sponsored by the Ladies' Auxiliary at the Elks' Club. The affair was characterized as an "apron party"—each lady of the Auxiliary wearing an apron and drawing from a box a tie to match, by which means partners for the evening were chisen. A cafeteria luncheon was served by the committee in charge of the affair.

Germantown Auxiliary Holds Two Parties

The Germantown, Pa., Women's Auxiliary held its May meeting at the home of Mrs. Stevens with twelve persons present. Mrs. Rich, Mrs. Rooney and Mrs. Lee were on the committee in charge of the affair. An enjoyable evening was spent at cards.

The April meeting was held at Mrs. Kupke's home with 15 members present. The men joined the ladies following the meeting. Ice cream and cakes were served by the social committee.

On June 7, the closing of the season, the auxiliary and master plumbers association will have another dinner party at the Springfield Inn.

Mansfield Auxiliary Entertained

The Mansfield, Ohio, Women's Auxiliary was entertained at the Schwartz tea room, April 28th, with Mrs. Henry Denig as hostess. Eleven members were present. Mrs. W. E. Antrican read an interesting article on "The First Bath Tub in Ohio." A lovely luncheon was served, with table decorations of pink and green. The June meeting will be held at the home of Mrs. Chet Critchfield.

Mrs. Charles L. Arting entertained the members recently. There were two guests, Mrs. Mary Adler of Columbus and Mrs. O. P. Wervey. Mrs. Adler gave two readings.

Entertains Pasadena Group

The Pasadena, Calif., Women's Auxiliary met at the home of Mrs. W. H. Swihart, president, recently, for a social gathering. Each member of the auxiliary brought a surprise dish which resulted in a delicious luncheon. There were twelve in attendance, including several guests, Mr. and Mrs. F. C. Shilling and Mrs. E. R. Wright of Los Angeles.

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The ease with which PERFECTION Floor and Ceiling Plates can be installed will make them favorites with you.
Once you have snapped them on the pipe, they'll hold snug always.
It is best to stock up with them so that you can have them at a moment's notice without delay.
Ask your jobber to supply them to you.

The BEATON & CADWELL MFG. CO.
Established 1894
NEW BRITAIN, CONN.

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1 Combined Splash and Pressure Lubrication
2 Helical Cut Gears
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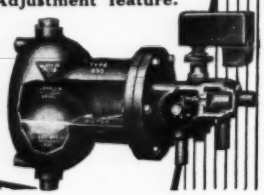

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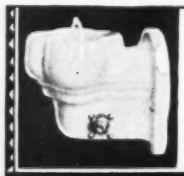

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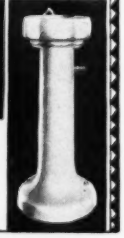
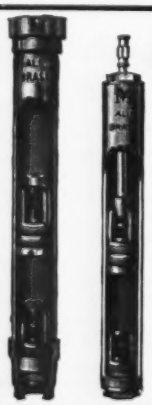


Two stream projector and practical automatic stream control

THE HALSEY W. TAYLOR CO., WARREN, O.



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THE F. E. MYERS & BRO. CO.
Ashland, Ohio

Pipe —— Lines
Connected by LYT

OH-HO!

A certain young couple who were married some months ago never had a cloud to mar their happiness. However, one morning the young wife came to breakfast in an extremely sullen mood. To all her husband's queries she returned snappish answers. She was in no better frame of mind when he came home that evening for dinner, all of which mystified the young husband.

Finally, late in the evening, in reply to his insistent demands to know what the matter was, the wife burst into tears and replied:

"John, if ever I dream again that you have kissed another woman, I'll never speak to you as long as I live."

A CASE FOR IMMERSION

Rev. Good (at baptism): "His name, please?"

Mother: "Algernon Phillip Percival Reginald Mortimer Duckworth."

Rev. (to his assistant): "A little more water, please."

Pennsylvania Punch Bowl.

HARD ON THE CAT

Customer: "I can't sleep at night—the least little sound disturbs me. I'm a victim of insomnia. Even a cat on our back fence distresses me beyond words."

Druggist: "This powder will be effective."

Customer: "When do I take it?"

Druggist: "You don't. Give it to the cat in milk."

Green Grown.

THE LAST WORD

A certain Kansas farmer was observed by his wife to be unusually pensive. "A penny for your thoughts!" she remarked.

"I was thinking, my dear," he said, "what epitaph I should put on your tombstone."

As his spouse was in perfect health, naturally, she resented this undue thoughtfulness.

"Oh, that's easy!" she responded briskly. "Just put 'Wife of the Above."

The teacher was explaining to a class of small boys and girls the meaning of the word "collision."

"A collision," she said, "is when two things come together unexpectedly. Now can anyone give me an example of a collision?"

"Twins," said the Class Idiot.

Prospect: "I can't see you today; come back Friday."

Salesman: "I won't be in town Friday."

Prospect: "Neither will I."

Doctor: "You must avoid all forms of excitement."

Male Patient: "But, doctor, can't I even look at them on the street?"

JUST AN 'ARMLESS JOKE

Venus de Milo certainly was a girl who got the breaks.

Jones was at a dinner party. He was shy and nervous, and could never summon up courage to speak because of his inability to say anything neat. All the evening he had been trying to think of something nice to say to his hostess. At last he thought he saw his chance.

"What a small appetite you have, Mr. Jones!" said his hostess with a smile.

"To sit next to you," he replied, gallantly, "would cause any man to lose his appetite."

LEIGHTON'S GLOOM CHASER.

A woman, suing for divorce, tells the court her husband spanked her, pulled her ears and hair, slammed a door on her arm, and then locked her up in a closet. She says she doesn't know why he did all these things. We do. He was mad at her.

L Y T

Little Sentences That Sell

Write one of these BLACKBOARD EPIGRAMS on your window or bulletin board each day. Many master plumbers and heating contractors find them real business getters.

If a lazy man is comfortable he is happy.

* * *

It is usually the better half that gets the worst of it.

* * *

The great objection to a theory is that it is very apt to strike a practical snag.

* * *

If you would be friendless be frank.

* * *

Baggage smashers are to be found on every trunk line.

* * *

Every age, like every human body, has its own distemper.

* * *

Home-keeping hearts are happiest.

* * *

Blessed are the joymakers.

* * *

When the fight begins within himself, a man's worth something.

* * *

If money really talked, what a picnic some people would have as bank clerks.

* * *

It is harder for some people not to do a mean act than it is to do it.

* * *

The blackboard is the original board of education.

Ithaca, N. Y.—The new tuberculosis sanitarium to be erected on the Trumansburg road, near this city, has been allocated an additional $325,000, bringing the total amount allotted for the proposed building to $1,075,000.

St. Joseph, Mo.—The Hale Brothers Plumbing & Heating Co. has been incorporated here by Everett Hale and Thomas B. Hale.

Los Angeles, Calif.—Charles A. Lundwall recently opened an office and shop at 4509 Central avenue, to engage in plumbing and heating contracting.

As you gain new business and the confidence of your customers by installing welded pipe systems, permanently leak-free, you will develop increasing confidence in Airco Oxygen if you give it a trial.

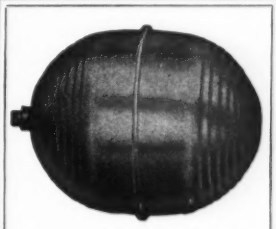
Its uniform quality and availability in any quantity should interest you if you are welding. If you are not, we shall be glad to explain how to gain customers, more business and even cut your overhead thru its use.

Air Reduction Sales Co.
Lincoln Bldg., E. 42nd St., New York City

Pure Copper

THE TOLEDO SOLDERLESS Float is built of pure copper "from stem to stern" as the saying goes. This outstanding construction feature makes for a long life of satisfactory service.

THE REICHERT FLOAT & MFG. CO.
2238 Smead Ave., Toledo, Ohio



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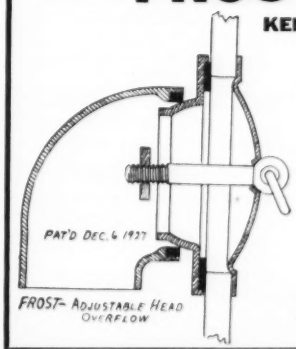

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Fills a Long Felt Want

Another Illustration of Real Quality Without Additional Cost

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HOTEL H. J. STEED, *Manager*
500 ROOMS
With bath and radio in every room.
Exceptional food at moderate prices.

SINGLE	$2. TO $4.
DOUBLE	$3. TO $6.
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Garage Adjoining
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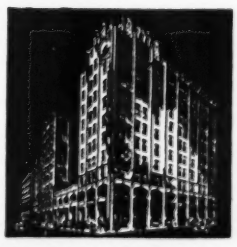

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Each with Bath and Running Ice Water
REDUCED RATES
$2.50 & $3.00
PER PERSON NO HIGHER
IN THE HEART OF THE CITY

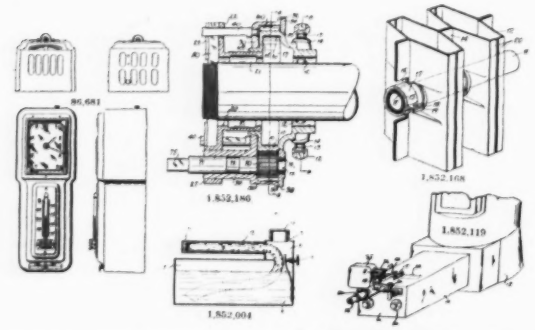
HOTEL SEVERIN

NEW IDEAS FROM PATENT OFFICE

Heating Department

86,681. Clock Thermostat. Andrew G. McNicoll, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware.

1,852,186. Diestock. Ira W. Nonneman, Warren, Ohio, assignor to The Borden Company, Warren, Ohio, a corporation of Ohio.

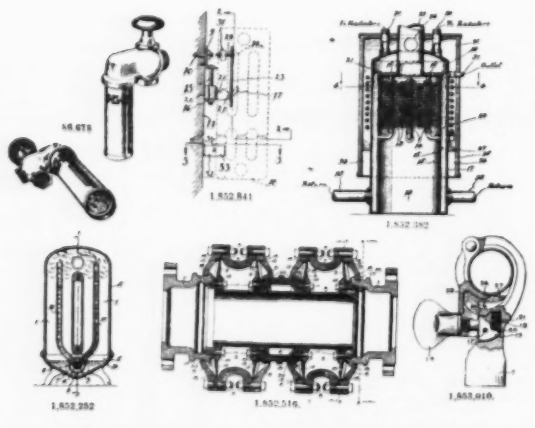


1,852,168. Radiator. Alfred R. Kuhn, Queens Village, N. Y., assignor to Metropolitan Engineering Company, a corporation of New York.

1,852,004. Wick for Humidifiers. Clifford E. Dunn, Short Hills, N. J.

1,852,119. Gas Burning Apparatus. Albert L. Klees, Long Beach, N. Y., assignor to Surface Combustion Corporation, Toledo, Ohio, a corporation of New York.

86,678. Ornamental Design for a Radiator Valve. James R. Lawler, Glencoe, Ill., assignor to Direct Control Valve Company, Chicago, Ill., a corporation of Delaware.



1,852,252. Steam Radiator. George C. McIntosh, St. Clair Shores, Mich.

1,852,841. Radiator Hanger. Dennis L. Healy and De Witt C. Ruff, 2d., St. Paul, Minn.

1,852,382. Heating Boiler. Lewis S. Wagle, Metuchen, N. J.

1,852,516. Expansion Joint. Robert Hall, Lockport, N. Y., assignor to American District Steam Company, North Tonawanda, N. Y., a corporation of New York.

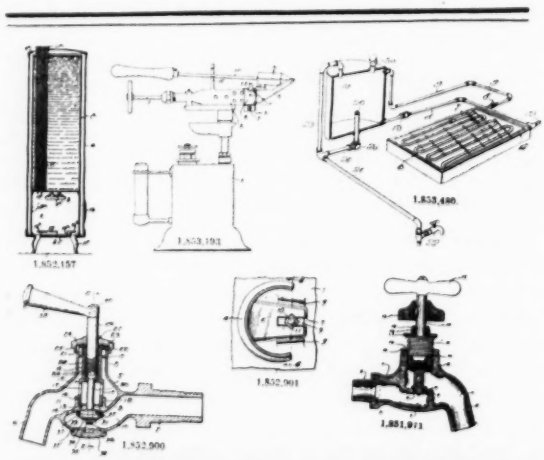
1,853,010. Pipe Hanger. Charles F. Wray, Rochester, N. Y., assignor to National Brass Manufacturing Company, Rochester, N. Y., a corporation of New York.

Plumbing Department

1,852,157. Heater. Paul H. Hamilton, Cleveland, Ohio, assignor to The Sands Manufacturing Company, Cleveland, Ohio, a corporation of Ohio.

1,853,193. Blowtorch Nozzle. Delosse E. Bicknell, St. Joseph, Mich.

1,853,480. Solar Water Heater. Henry A. Wheeler and Frank J. Bentz, Miami, Fla.; said Wheeler assignor of one-fourth to Frank J. Bentz and one-fourth to L. E. Bentz, Miami, Fla.



1,852,900. Faucet. James P. Robinson, Tokyo, Japan.

1,852,901. Bathtub Adjustable Leg. Laurence A. Rockelein, Port Jervis, N. Y.

1,851,971. Valve Seater. Richard W. Bayley, Elyria, Ohio.

Klamath Falls, Ore.—The Starr Company has engaged in the plumbing and heating business here under the management of Tracy M. Starr.

New York City—Sandow Simon, Inc., has been organized, with a nominal capital of $500, to establish and operate a plumbing engineering and contracting business. M. G. Lewis, 170 Broadway, represents the new firm.

8 cents for each word including heading and address. Count seven words for keyed address. Minimum $2.00 for each insertion.

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Due to expansion of our dealer organization positions are open on sales forces of Iron Fireman Dealers in all parts of the United States.

Only men with good sales records considered; exceptional opportunities for men who can qualify; experience in selling heating equipment or home specialties desirable.

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IRON FIREMAN MFG. CO.
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SPECIALTY SALESMEN TO CALL ON plumbers and steamfitters wanted by manufacturer with national distribution. Address Key 742, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

SALES AGENTS WANTED BY BRASS manufacturer selling to jobbers in Detroit, St. Louis, Kansas City, Denver, Salt Lake City and Minneapolis. Address Key 738, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

REPRESENTATIVES WANTED IN leading cities to handle highest grade line of radiator shields and radiator cabinets. Our representatives earn $500.00 to $1,000.00 per month the year around, above expenses. Full selling plan furnished. Address Key 256, "Domestic Engineering," 1900 Prairie Ave., Chicago.

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PLUMBING, HEATING OR VENTILATing office manager, estimator or job superintendent. Experience on all types of buildings, especially government work; 36 years old, married, now in Detroit area. Address Key 737, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

SITUATION WANTED—A1 PLUMBER and fitter, licensed, wants steady position. Can invest some money. Write W. H. Dampman, 2019 Center Street, Little Rock, Ark.

RELIABLE BOOKKEEPER DESIRES position in plumbing or heating office. Good experience and good references. Address Key 725, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

Lines Wanted

MANUFACTURERS' AGENT COVERing jobbers in New York City territory for past ten years, will take on additional lines. Address Key 739, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

Lines to Handle

SALESMEN OR MANUFACTURERS' agents interested in securing a heating item for sale on a commission basis will be interested in our specialty. Address Key 745, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

MANUFACTURER OF A NATIONALLY jobber-distributed heating specialty heretofore sold through own salesman will place this line with manufacturers' representative covering Eastern Wisconsin, Illinois and Indiana. Iowa, Missouri, Nebraska and Kansas also available. If interested—Address Key 741, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

WANTED MANUFACTURERS' AGENT or Salesman to handle heating specialty on commission basis in following centers, Milwaukee—Cleveland—Pittsburgh — Cincinnati — Columbus — and New England territories on commission basis. Address Key 746, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

MANUFACTURER OF WELL ADVERtised heating specialty has several territories open. This specialty will fit in well with most any line of heating equipment and is one that can be sold to an advantage in connection with remodeling work. Address Key 744, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

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REPRESENTATIVES WANTED IN leading cities throughout the United States by responsible Eastern manufacturer of complete line copper radiators, unit heaters, humidifiers, and water heaters. Lucrative commission opportunity for men of executive ability, outstanding sales records and thoroughly experienced in sale of steam and hot water heating equipment. Must be acquainted with architects, engineers, heating and plumbing trade. Write fully experience, past sales, territory covered, references. Address Key 743, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

Use this page to get what you want

If you are looking for competent employes; or if you contemplate a change in position, have a patent for sale; wish to purchase or sell a plumbing and heating business; second-hand machinery or tools; form a co-partnership, etc., your advertisement on this page will put you in touch with the people you desire to reach.

The cost of insertion is only eight cents a word and may mean many dollars to you.

A NUMBER OF GOOD TERRITORIES open for manufacturers' agents calling on sheet metal trade, both retail and jobbing. Please give details on lines now handled, territory covered, etc. Address Key 748, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Ill.

SALES REPRESENTATIVES
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who are thoroughly experienced in the sale of steam and hot water heating equipment, who have outstanding sales records and who are interested at this time in a lucrative sales opportunity such as does not usually exist, should write for further information. Give full particulars concerning experience, past connections and sales. Present members of organization are aware of this ad and all inquiries will be treated confidentially. Address P. O. Box 1222, Pittsburgh, Pa.

MANUFACTURERS' AGENTS

Manufacturer of warm air furnaces wants two good representatives, one in the Illinois territory and one in Michigan. Liberal proposition. In answering this advertisement please give the names of accounts you are now handling. Address Key 747, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Ill.

Miscellaneous

WE MAKE A SPECIALTY OF JOB Tickets, Time Sheets, Letter Heads, Envelopes, etc., for Plumbing Contractors. Prices include delivery to Eastern Points. Samples mailed. Address Louis Fink & Sons, School Building, Laurel Springs, New Jersey.

Audel's Plumbers' Guide

The standard educator; teaches the theory and practice of plumbing, heating, steamfitting, gasfitting and sheet metal work. Answers your questions. Explains the new short cuts, modern methods and inside trade information. Easy to understand. A complete reference and home study course. Fully illustrated, authentic, up-to-date, with plumbers code. Four volumes, pocket size; price $6 complete, payable $1 a month. Write today for FREE Plumbers Folder. THEO. AUDEL & CO., 65 W. 23rd St., New York.

AIR CONDITIONING SYSTEM FOR residential application. Takes care of heating, cooling, humidifying, dehumidifying and filtering. Owner and inventor wishes to get in touch with a manufacturer with sufficient finance and manufacturing facilities to make and market this system. Address Key 729, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

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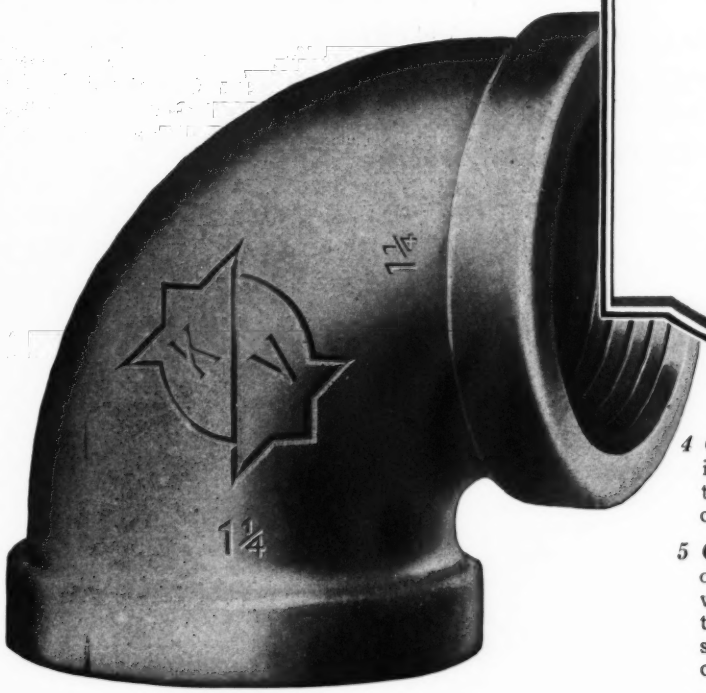
8 *good reasons*

Kennedy Malleable Iron Pipe Fittings



1 ***Malleability***—Kennedy Fittings are annealed for 200 hours—more than eight days—in pyrometer-controlled annealing ovens. This thorough annealing makes them so truly malleable that they can be crushed almost flat without splitting.

2 ***Strength***—The metal in Kennedy Fittings is selected with particular care and then tested for a tensile strength of 45,000 lbs. per sq. in. before being used.

3 ***Alignment*** — The precision equipment on which Kennedy Fittings are machined assures alignment to 0.010-in. limits.

4 ***Galvanizing***—Kennedy Fittings are galvanized by the hot dip process and then inspected to make sure of thorough, heavy, uniform coating.

5 ***Convenience of Handling***—The size marked on each fitting for ready identification, the wide chamfer for starting quickly on pipe threads, and the clean, sharp threads for speedy make-up are some of the Kennedy conveniences.

6 ***Completeness of Line***—Every standard type and size are included in the Kennedy line of black and galvanized, plain and banded malleable iron pipe fittings.

7 ***Price***—Kennedy Fittings are always reasonably priced and cost no more than ordinary fittings.

8 ***Manufacturing Facilities and Distribution***—A 15-acre plant is devoted exclusively to the manufacture of Kennedy Malleable Iron Fittings and they are handled by dealers everywhere. Your local supply house can readily obtain them for you.

Kennedy Valves and Pipe Fittings are obtainable from your dealer

The Kennedy Valve Mfg. Co., Elmira, N. Y.

Warehouses and Representatives in Principal Cities

KENNEDY

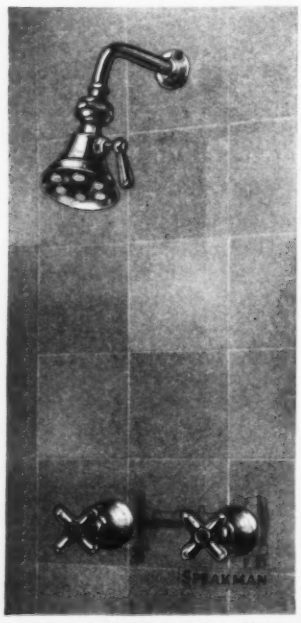
VALVES-PIPE FITTINGS-FIRE HYDRANTS

Today *you* wouldn't buy a

Neither do your customers want showers that are not modern...

Two popular Speakman Showers equipped with the Anystream Self-Cleaning Shower Head

K-2601-M—SPEAKMAN Metaline Built-in Mixometer Shower. Size ½ inch. Mixometer with metal wall plate and metal handle. Bent arm with metal escutcheon, ball joint and Anystream Self-Cleaning Shower Head.



K-2634-M—SPEAKMAN Built-in Metaline Heavywate Shower. Size ½ inch. Hi-seat valves, with unions, renewable seats, metal escutcheons, and metal handles, and black enamel indexes. Bent arm with metal escutcheon, ball joint, and Speakman Anystream Self-Cleaning Shower Head.

The Speakman Anystream Self-Cleaning Shower Head gives the last word in shower convenience

. . . Include one with every shower you sell

K-3395 — SPEAKMAN Anystream Self-Cleaning Shower Head. Pat. Jan. 2, 1923 & Nov. 3, 1931.

TURN the handle of the Anystream Self-Cleaning Head forward and you have a fine needle spray, even on comparatively low house water pressure. Turn the handle back half-way for a normal shower—And when the handle is turned back further the bather is in a flood of water which pours from the 48 slots in the head.

The Anystream Self-Cleaning Shower Head fits all makes and types of showers. There are special types for hospitals, institutions, country and athletic clubs.

Literature showing the operation of the Speakman Anystream Self-Cleaning Shower Head will be supplied promptly, imprinted with your name and address.

SPEAKMAN COMPANY
Wilmington, Delaware

SPEAKMAN
SHOWERS & FIXTURES

Get PROFITABLE volume out of what exists TODAY— Remodel with KAINER Specialties

REMODEL any ordinary gravity hot water job with KAINER Specialties to make it fully closed, entirely automatic.

There is a wide range of KAINER Specialties from which to choose and prices have been attractively revised to meet today's needs.

Bulletin 32B just off the press illustrates the complete line and contains diagrams showing various combinations possible for several hookups together with capacities, sizes and latest prices.

Write today, for your copy with discount sheet.

KAINER & COMPANY
CHICAGO
761 MATHER STREET

HANDLED BY THE BETTER JOBBERS

SIZES TO HEAT WATER FOR ONE FAMILY OR ONE HUNDRED

Two Excelso Indirect Water Heaters like this supply hot water to 74 families, summer and winter.

"Royal Arms" Apartments, 74 families, 237 Ovington Avenue, Brooklyn, N. Y. Owner, T. Johnson.

"SAVED $1,600.00"

··Says Brooklyn Apartment House Owner··and Orders 3 more Excelsos

DURING these times when the differential between building operation costs and income is exceedingly close America over, the SAVING WITH EXCELSO is attracting the attention of new prospects by the hundreds.

The following letter from a prominent Brooklyn owner is typical of what these savings indicate when translated into actual operating figures—

"The writer has handled many building contracts in his twenty-six years of experience, but has never contracted for any equipment that has been as satisfactory as the Excelso Heaters installed in my apartment house at 237 Ovington Ave., Brooklyn, N. Y. The savings effected are greater than you promised before I made the installation.

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"I have estimated that the installation of your product has saved me $1600.00 in one year, and I have since equipped three more of my apartment houses with the same."

Triple Coil Excelso Indirect Water Heater. Coils are removable and of copper with the exclusive Excelso ground joint brass connections. Capacities 500 to 1,000 gallons.

Dual Coil Excelso Indirect Water Heater with removable copper coil and patented ground joint brass connections. Capacities 1,200 to 2,500 gallons.

Stocked by Leading Wholesalers and Boiler and Radiator Manufacturers Everywhere

EXCELSO PRODUCTS CORP.

57 Clyde Avenue Buffalo, N. Y.

EXCELSO INDIRECT WATER HEATERS

SEE US AT THE NATIONAL PLUMBER'S SHOW IN MADISON SQUARE GARDEN, NEW YORK, JUNE 20-23

Lady Luxury Vanadium and Lady Luxury Aluminum Chairs in Booth 10
Excelso Heaters in Booth 52